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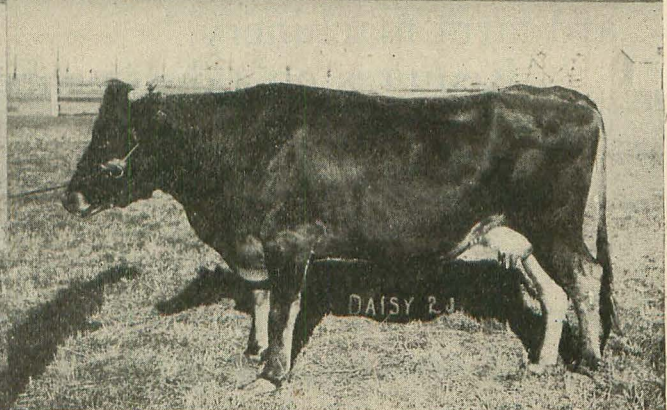
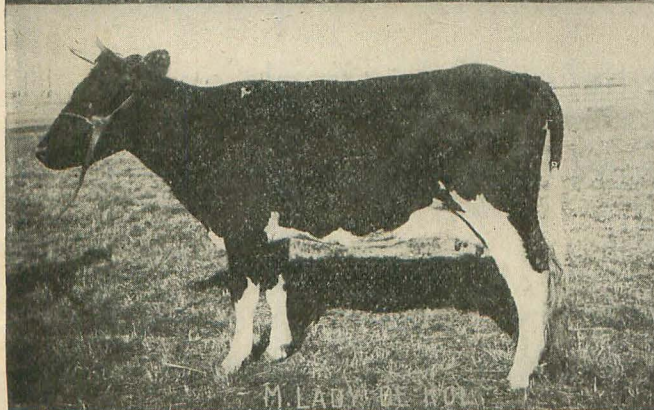
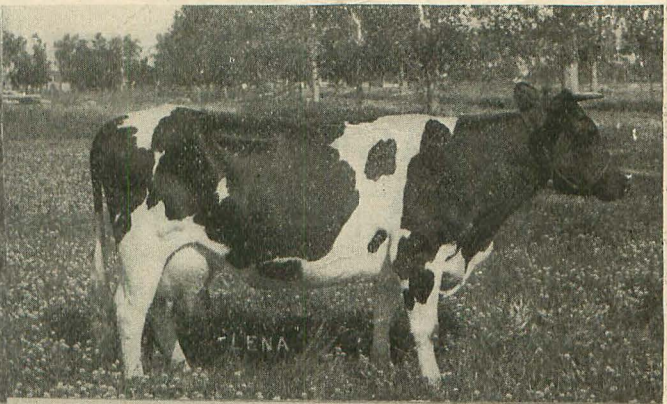
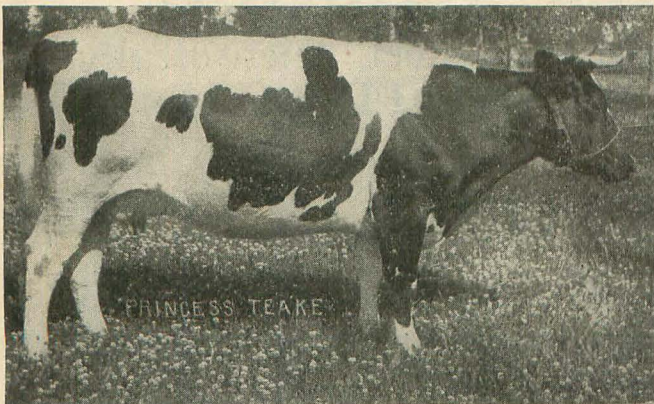


"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 14 No. 10

Lisbon, North Dakota, April 15, 1913

50 Cents A Year

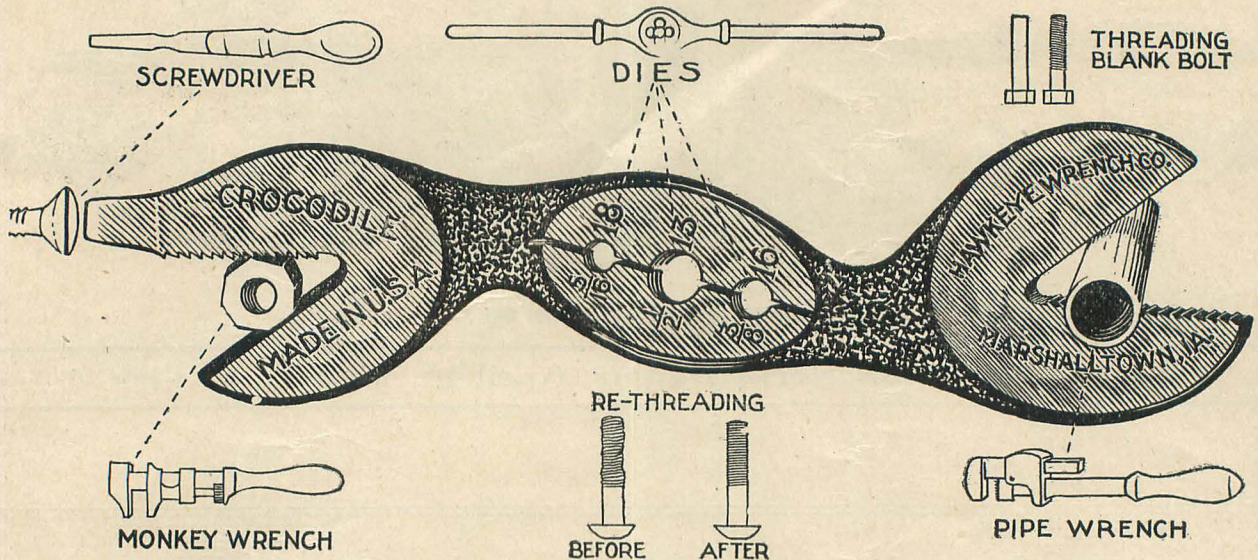


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For Description See Page 10.

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THE NORTH DAKOTA FARMER

DAIRY & LIVESTOCK NUMBER

Vol. 14, No. 10

LISBON N. D., APRIL 15, 1913

50 Cents a Year

The Livestock Industry

By R. C. Rusmiser



THE TOTAL VALUE of the livestock in the United States is over three billion dollars—more than the combined value of all the corn, wheat and other cereals; all the tobacco, lumber, and wool; all the coal petroleum, gold, silver and precious stones; all of the iron, copper, lead and zinc and all of the cotton, hay, potatoes, sugar and molasses produced annually in all the country. It will be readily seen that the raising of livestock is one of the greatest of our industries, and it is one of the most profitable, also.

Cattle, horses, hogs and sheep are the principal kinds of animals grown. For every thousand inhabitants there are over two hundred milch cows, nearly nine hundred beef cattle, two hundred and sixty horses and mules and over eight hundred hogs. A grand total would aggregate, approximately, 70,000,000 cattle; 20,000,000 horses; 3,500,000 mules; 68,000,000 hogs and 70,000,000 sheep. The aggregate number of fowls of all kinds, including chickens, turkeys, geese and ducks, is in excess of 255,000,000.

Sources of Cattle Supply

The sources of supply of cattle are widely distributed, on account of the various kinds. New York, Illinois, Iowa, Wisconsin and Pennsylvania—the states where dairying is a leading industry—lead in the production of milch cows, each having over a million head. In the production of other cattle Texas leads, with nearly 5,000,000 head; Iowa and Kansas each have over 2,000,000 head, while Missouri, Illinois and Nebraska each produce over a million head. The great areas of supply of horses and mules are the states where pasturage is found in abundant quantity and where cereal feed is relatively inexpensive. Seventy per cent of the horses are found in sixteen of the Southern and Central States, the greatest being Texas, Illinois, Kentucky, and Iowa, each producing over a million head. Texas, Missouri, Georgia and Mississippi lead in the production of mules.

In the corn-growing states hogs are grown most economically. Eighteen states produce from one million to nine million head each, which together constitutes eighty-five per cent of all the hogs in this country. The largest producers are, in order of their importance, Iowa, Illinois, Missouri, Nebraska, Indiana, Kansas, Ohio, Georgia and Illinois.

Ohio, Utah, Oregon, Michigan and California.

Receiving and Distributing Points

The greatest receiving centers of livestock in the United States are Chicago, Omaha, Kansas City and St. Joseph. The prominence of these cities as markets is due to their location within easy reach of the productive areas. They also have abundant facilities for the distribution of meat products to consuming centers. These gateways between the stock-raiser and the consumer of the dressed product, occupy a geographical position of great economic strength. The rapid growth of this business evidenced the value of the location of the industry near the sources of



Cattle in the Missouri Valley

When pasturage gave way to tillage on the frontier, the shepherd moved his flocks still further westward, and when the ranges narrowed he competed with the cowboy for the field. At the present time the industry is the largest in the Northwest, the greatest producing states being Montana, with nearly 7,000,000 head, Wyoming and New Mexico with nearly 6,000,000 each, followed closely by

supply, as Omaha has become the second packing center in the world within the past twenty years, while the industry is comparatively young in all of these cities.

Horses and Mules

St. Louis is the greatest horse and mule market in the world, three-fourths of all the states of the Union continually making many shipments there. We produce more

horses and mules than any country in the world, and a comparison may be interesting. We have in this country 20,000,000 horses and 3,500,000 mules. Great Britain uses about 2,000,000; France 3,000,000; and the German Empire has about 4,000,000, the largest supply of any nation in Europe, with the exception of Russia, whose supply is only one-fifth that of ours. These figures show why Great Britain purchased so many horses and mules from this country during the South African war and why that nation always has difficulty in securing enough horses for use in her army.

Horses are bred in this country upon a large scale. Saddle horses and race horses will always bring a good price. The thoroughbred is raised in the bluegrass regions of Kentucky and in California, and the trade for saddle horses is in Kentucky also. The trotter is the horse, outside of general work horses, that is

carried on to the extent it is in this country. It is estimated that we produce half of the hogs raised in the world. Russia comes second, with about twelve per cent, and Germany third with eight per cent. More than three-fourths of all the corn grown in the world is produced in the "corn belt" of the United States. We annually grow over 2,000,000,000 bushels of corn in this country, and export about 250,000,000 bushels, all of the rest being fed upon the farm. There is no other animal to which corn can be fed as profitably as to the hog. Government tests have shown that from one hundred pounds of corn nine pounds of live steer, eleven pounds of live sheep and twenty-four pounds of live hog are produced. The raising of hogs is a great economy in the farmer's business, not only as regards the feeding of corn but also in the consumption of the by-products of the dairy. The scientific farmer expects to get seventeen

gives grazing to produce over one-half of the wool of this country. The business, under such conditions, is very profitable, and the quality produced in these sections is equal to that of Australia. However, within a few years the government reserves will not be accessible and the industry will have to be conducted upon another basis.

Stock-Raising Association

The stock-raising industry has been placed upon a scientific basis thru the organization of various associations, each calculated to advance the interests of particular breeds. The greatest of these is the National Livestock Association, composed of over one hundred livestock and kindred associations. At the Department of Agriculture there are registered fifteen national organizations for cattle, the principal being the Hereford, with approximately 120,000 registrations; the Shorthorn with 450,000; the Jersey,



This mare and her six colts are owned by J. D. Parkman of Hope, N. D. The mare was purchased seven years ago for \$150. Has she paid for herself?

generally raised, and these are produced in great numbers in Michigan, Iowa, Illinois, Wisconsin, Tennessee and many other states. Heavy horses for hauling are produced in every state in great profusion.

Many changes have recently taken place in the management of the great range herds. We now find the cowboy mending wire fences and doing chores about the modern ranch, for where the great herds formerly roamed there are now fenced farms and the land is mostly under cultivation. The largest ranches that yet remain intact are in Texas, but it is only a question of a little time until the cowboy with his broad-brimmed hat, buckskin trousers and lariat will be a curiosity. Cattle are now bred, housed and cared for with the utmost regard for their welfare.

Hog Raising

Nowhere else in the world is hog raising

pounds of pork from a bushel of corn. No other animal can be turned so quickly into cash, as hogs are grown as rapidly as a crop of grain.

Sheep

Mutton is one of the most nutritious of foods and the wool of the sheep makes the best clothing, yet wool growing is one of the least developed of our industries. The total number of sheep in this country is estimated at 70,000,000, but this number does not supply our woolen mills with the material needed. The greater portion of the sheep in this country are grown along the mountain ranges, where grazing is alternated between the level lands at the base and the mountain ranges. Great bands of sheep are annually driven into the government reserves of Wyoming, Oregon and California, and this, with the open government ranges on the plains,

with 220,000; the Holstein-Friesian with 100,000, and the Aberdeen-Angus with 35,000.

Of the horse-breeders' associations, the best known is the Trotting Registry, with fifteen volumes of registrations, the last containing 18,000 entries; the American Stud Book, Thoroughbred with 26,000; Clydesdale, 12,000; French Draught, with 11,500; and the Shire Horse, with 6,000.

Twenty-seven sheep breeders' associations are listed, with Cotswolds and Oxford Downs in the lead, with 23,000 registrations each; South Down, 15,000; Rambouillet, 15,000; Dorset Down, Hampshire Down, Lincoln and Cheviot, about 10,000 each. The Merinos are divided into several societies, of which the Michigan has 50,000 entries.

Hogs have sixteen associations of breeders. Berkshires have 60,000 registrations,

Duroc-Jersey 16,000 Chester White 25,000 and Poland-China 15,000. In addition to these there are many state associations, but they do not keep pedigrees, generally, and are not recognized by the Government.

An industry closely associated with sheep raising is the growing of Angora goats. This beautiful little animal was from the Turkish village of Angora,

very insignificant part of their livestock, and yet, altho often neglected, and forced to shift for themselves, the poultry and egg crop constitute, in the aggregate, one of the most important and valuable products of the farm. The conditions of this country are such that the poultry industry is capable of indefinite expansion, and therefore able to meet any demands that may be made upon it. In practical poultry

harvested as silage. The total amount of digestible nutrients from the various ways of harvesting an acre of corn that would tabulate as follows:

	Protein lbs.	Carb. lbs.	Fats lbs.	Total lbs.
Ears and Stover	152.5	1645	78.5	1876
Corn Fodder	100	1400	48	1548
Silage.....	132	1680	84	1896

From this it appears that there is very little difference in actual amount of food material obtained by the different ways of harvesting yet there are a few other points to be considered in actual practice.

Losses in Methods of Harvesting

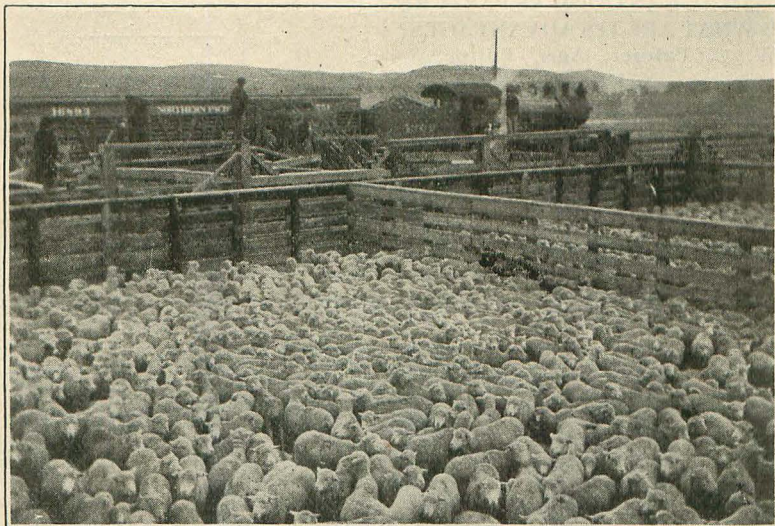
It appears that several of the Agricultural Experiment Stations have worked upon this same problem with quite similar results. Experiments show that the food material in the corn plant increases as maturity approaches, so whether the crop is to be used as grain, fodder or silage much will be lost by harvesting too early. On the other hand, if the crop is allowed to stand in the field as stover or in the shock as fodder considerable of the food matter will be lost. According to reports from the Iowa Station, the corn crop reaches the highest yield at the stage where the ears begin to ripen and leaves begin to dry, which is about the time the crop would be harvested as fodder or cut for silage. At the Iowa Station, the loss in food material by leaving the cornstalks in the field for two months amounted to over one-half the total feeding value of the corn plant. The amount of food-matter in the corn stover is usually estimated at 40% of the total for the plant. Where the corn was cut for fodder and left in the field in shocks the loss in feeding value due to sun, rain, and wind averaged about 40% at the Colorado Station, and 25% at Oklahoma and Wisconsin Stations.

There will be some loss occasioned when harvesting corn in the form of silage depending very much on how well the silo is made and filled, yet the highest estimates given by authorities on the subject do not exceed 10%.

By allowing for these losses with the different methods of harvesting, the following table will give the net amount of food material from an acre of corn:

	Total Nutrients lbs.	Per Cent Loss	Net Nu- trients lbs.
Grain and Stover	1876	40%	1125.6
Corn Fodder	1548	25%	1161.0
Silage	1896	10%	1706.4

"An inspection of the table bears out the best authorities on feeds and demonstrates that after allowing for the losses, the silage method is much more economical than either of the others. The farmers of the corn belt are thoroly convinced that the silo is indispensable and the number to be built this season runs into the hundreds.



Loading Sheep--Columbus, Mont.

and the industry has spread most in recent years. A herd is easily taken care of, will effectively clean up brush land, requiring little else for subsistence, and the wool is valuable for the manufacture of plush and cloths. They are grown principally in Texas, California and Oregon.

Poultry

Poultry is regarded by most farmers as a

try rearing, the profits are, as a rule, made by those who make eggs the primary, and dressed poultry the secondary, object. Modern conditions in the poultry field call for incubators, brooders and pedigreed stock, and the hatching of chickens, turkeys, geese and ducks by thousands instead of by small broods.



SILO -- The Best Way to Harvest the Corn Crop

G. L. Martin, Professor of Dairying, N. D. A. C.

The best way to utilize the corn crop is something every farmer ought to consider. Of course it will depend upon the situation, location and system of farming but these factors are more or less under the control of the farmer. The different ways of harvesting here considered are—first, where the crop is allowed to ripen then the ears gathered and sold or fed to livestock, and the stover, which is the stalks and leaves, left in the field after husking; second, where the crop is harvested as corn fodder; and the third, where the crop is harvested as silage.

Food Yield Per Acre

In order to arrive at a comparison of the food returns from the various ways of harvesting, it will be necessary to base the computations upon the actual amount of digestible nutrients in the corn, the stover, the corn fodder, and the corn silage.

We will assume as a fair estimate that that corn crop thruout the Northwest will yield 25 bushels per acre and two tons of stover harvested the first way; two tons per acre of cured fodder harvested the second way; and six tons per acre when

Cost of Harvesting

The cost of harvesting an acre of corn will vary with the locality and amount of help that must be hired. In the Northwest, the cost of husking a bushel is estimated at four cents while the cost of cutting, shocking and hauling corn fodder will average about thirty cents per ton, and for harvesting the crop as silage about sixty cents per ton. Then according to above estimates the cost per acre would be:

	Yield per A.	Cost	Cost per A
Corn Grain...	25 bu.	\$0.04	\$1.00
Corn Fodder . .	2 tons	\$0.30	.60
Silage.....	6 tons	\$0.60	\$3.60

The cost of harvesting silage is somewhat greater than the other methods, yet on the other hand it furnishes much greater amount of food material per acre which in the end makes the cost of harvesting very nearly equal.

ence in the amount of food material contained but silage, being succulent is somewhat more palatable, can be fed to cows with smaller loss, and has the advantage in greatly stimulating the milk flow, so with all points carefully considered there is no way to harvest the corn crop which will yield such large and safe returns as to put it into the silo.

IS ENSILAGE AS GOOD AS PASTURE AND WHAT ARE ITS ADVANTAGES?

W. C. Palmer, Agri. Editor,
N. D. A. C.

Ensilage has well been called concentrated pasture. It is the best substitute for pasture, so far found, and it has this advantage—it can be had at any season of the year.

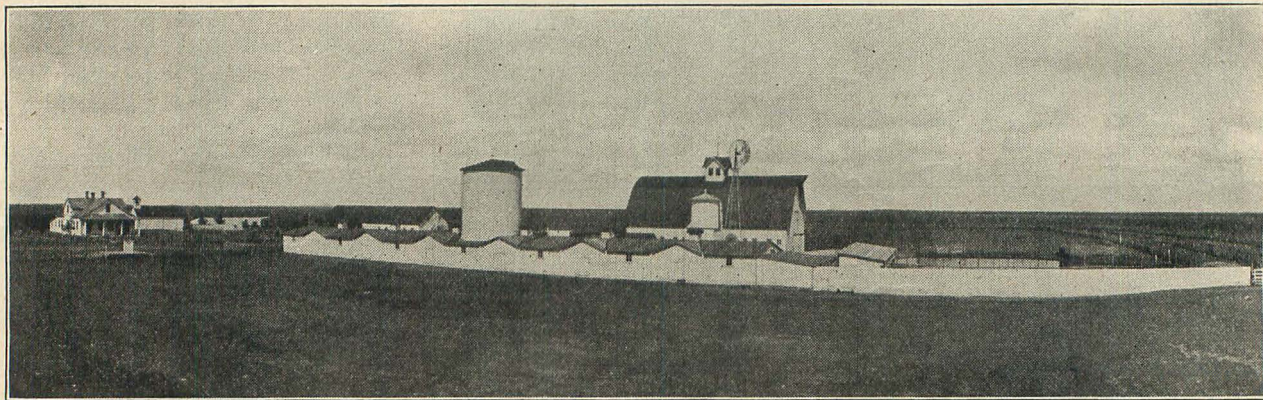
The best crop for putting in the silo is corn. It has been found that the nearer ripe the corn is the more food value it has.

this time. Some fill the silo a second time by cutting up corn that has stood in the shock while that in the silo was being fed. By adding water the dry corn makes a good ensilage. It does not seem to hurt the corn for ensilage if frozen but it should be put in the silo right away after freezing. It does not hurt the ensilage to freeze in the silo provided it is thawed out before it is fed to the stock. Ensilage is a mighty good feed to use in the summer when pastures are short as well as in the winter.

GETTING MILK WITH A CLUB

Edgar L. Vincent in Journal
of Agriculture

The longer I live, the more convinced I am that good care of stock is the real secret of success. I know some say you cannot do anything worth while unless



Ideal Stock and Dairy Farm of J. A. Englund, Kenmare, N. D.

Feeding Value

There is yet another point to be considered, which after all is the important factor, at least from the standpoint of milk production. The corn grain alone is essentially fat-producing owing to its high starch and oil content so is not well adapted to milk production unless fed in small quantities with some protein feed as alfalfa, bran, gluten feed, or cotton seed meal to balance the nutrients. With corn fodder and silage is found very little differ-

Prof. Ladd found that there was but little food value in the corn when tasseled out—that the food value increased fast from then on. In fact that the food value doubled between the time the corn tasseled and silked out, trebled by the time the corn was in milk stage, quadrupled when in glazing stage and five times as much when ripe. The best and most food value is secured in ensilage made from corn in the glazing stage. The corn can be put in silo when ripe tho it may be necessary to add some water at

you have all thoroughbred cattle, and it is a fact that well bred stock do help wonderfully in bringing about success. There are others who say it is all in the feed you give cows. Here, too, there is a great deal of truth. Feed does go a long way toward bringing us to the goal of our undertaking. And yet, you may have as good cows as you can get and all the good feed possible, but if you are not kind and considerate you will make a failure of it. Sure as the world.

But, do you say, cattle don't know the difference. They are only brutes, anyway. Now, get your ear down and listen. This is a true story I am going to tell you. A man I know of had a nice herd of cows. He made up his mind he would see whether there was anything in the oft-repeated statement that it pays to use your cows right. He had a Babcock test and knew how to use it himself. So one day he tested his cows' milk and weighed it up carefully. All the work was done carefully and as gently as possible. He took pains to have the cows still in the stable and to make the conditions just as pleasant for them as he could. Of this test he made a record.



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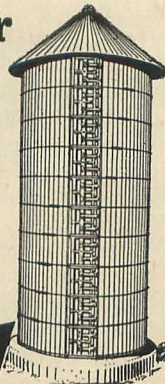
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Soon afterward, I think it was the next day, he got the cows into the yard and then he took the dog and a big club and went down among the cattle and began to yell and drive the cows round. The dog naturally joined in the melee and they had a great circus right then and there. The cows did not know what to make of it. They never had been treated that way and they got fairly frantic. Then the man let the cows into the barn and milked them as fast as he could, doing it all in a rough, harsh way. Now he kept samples of the milk again and weighed the amount he got. How did it come out? Well, not only was there a great falling off in the amount of milk drawn, but the butterfat was not in the milk either. He lost both on the weight and on the goodness of the milk. He had it all down in black and white so that he could tell just what his loss was in that fracas. It was certainly surprising.

We do not know what we lose by being unkid or even rough in manner and voice when we do our farm chores. You just watch a cow that is afraid when she is milked and see how she behaves. If she does not get mad and kick a blue streak, she keeps her eyes peeled back at the one

who is milking her. It may be she does not eat at all. In every way she acts as if she knew things were not right. She is afraid of her life, that is all there is of it, and that affects the milk. I don't know how; I am not scientific enough for that. And I don't know as anybody is; nor does it matter so very much. The thing to know and to pay attention to is that it does cause a marked falling off in the quantity and the quality of the milk we get. How much that would amount to in the course of a season, who is wise enough to tell?

There is another way in which kind treatment pays. You may know that in these days there is a great deal said about the power one person may have over another to make him sick or well, just according to whether he is good and kind or harsh and unfeeling. It affects the digestion. Food does not digest as well if the mind is disturbed. A strong-willed person can make another fairly sick, just by all the time doing and saying things to hurt the feelings and make him worried. It is a good deal so with cows. They will not make as good use of food given them if it is eaten under wrong circumstances. If they are afraid and all the time expecting to be hurt, they will hurry their

food down, if they eat at all, and never get the goodness out of it as they would if they had a chance to eat it quietly. We don't know how this is. There is some connection between the nervous system of a cow and the milk-making apparatus which has a direct bearing on the amount and the richness of the milk we take from the cow.

VALUE OF STABLE MANURE

That barnyard manure may be made more or less valuable, according to care and treatment, is becoming apparent to every thinking farmer. In the past, little thought was given to its care, and the

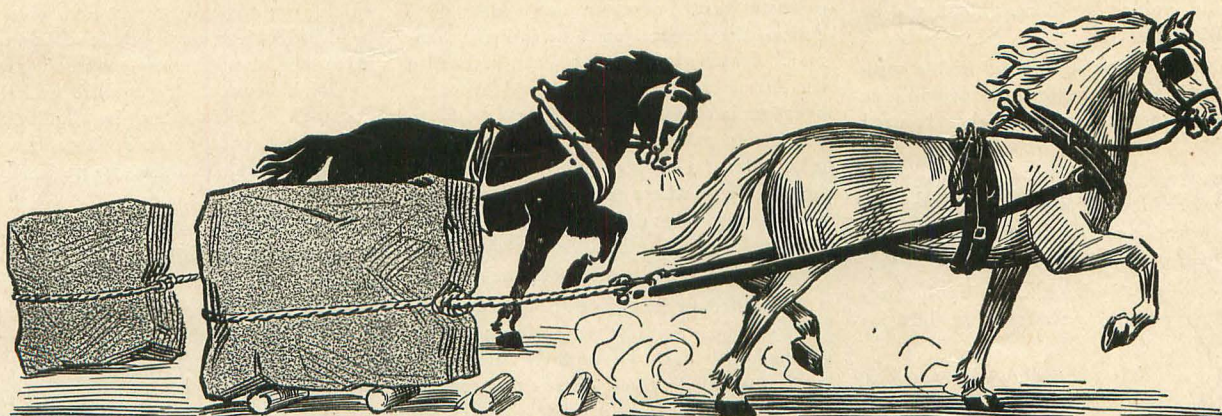


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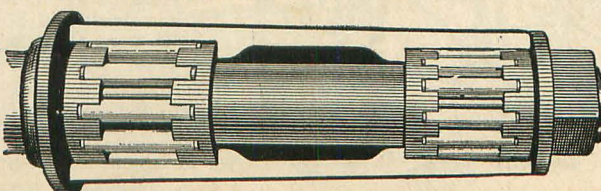
because the roller bearings run so much lighter and require less power to pull the load. They save time—money—horses—harness—feed—repair bills—greasing—trouble, and wear on the wagon. They are much easier on the horses, and soon pay for themselves by economy of operation.

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wastage, collectively and annually, was—and is—something astounding.

A valuable bulletin (No. 246) has just been issued by the Ohio Experiment Station, (Wooster), which gives marked emphasis to the value of re-inforcing ordinary manure; their experiments indicating that the full value of the nitrogen and potassium present cannot be secured without an accompanying and adequate supply of phosphorus.

While most of us have known that manure lacked a full and proper balance, this later point, is at least to the writer, a new and very pertinent consideration. If by the addition of small amounts of "phosphatic materials" we can increase the effectiveness of the fertilizer and bring into use the two plant foods referred to, another great and perhaps unsuspected wastage will have been stopped. The point, coming from such authority, is worthy a test on every farm, and we suggest that every interested reader send for a copy of the bulletin.

We print below a brief summary of the conclusions arrived at:

The least amount of nitrogen will be lost from stored manure if animals are kept on it, or where kept in a moist, well packed condition.

The liquid excrement from farm animals contains nearly half the nitrogen and potassium voided by them, and should be carefully preserved.

Manure used in conjunction with a complete fertilizer high in phosphorus will give better returns than when either is used alone.

When steers are fed on cement floors the manure produced is more than \$4.00 per year greater for each animal than when fed on earth floors.

"Fire fanging" of manure may be prevented by excluding air from the interior of the pile.

If the animals are removed from box stalls for a considerable time the loss of nitrogen from the manure will be much greater than if the animals are kept in stall.

Open barnyard manure is about one-half as valuable as stall manure.

Stall manure appears to be more effective in rendering phosphorus available from floats and other materials carrying phosphorus in slightly available form, than yard manure.

The addition of phosphatic materials to manure greatly increases its fertilizing value and pays a handsome return for the

trouble. For this purpose phosphatic materials will prove more valuable on most (Ohio) soils than gypsum or kainit.

Manure used in connection with continuous cropping will not maintain the maximum yield, but when used in connection with crop rotation it increases the yield of all crops grown in that rotation.

DON'T BE A DRUDGE

J. H. Worst, President N. D. A. C.

There is still considerable drudgery tolerated on many farms and especially in farm homes. Much of this drudgery, if not all of it, seems useless. A little more patience, somewhat better laid plans and sufficient brain exercise would not only eliminate the drudgery but accomplish as much or more work, with pleasure. Modern inventions in the form of labor-saving machinery, where employed, renders the work of both the farm and the household more rapid and less laborious. The proper use of labor-saving devices, therefore, having become a necessity, their study and mastery should be considered an essential part of every country child's education, the same as arithmetic and grammar. Much of this training can be had on the farm, especially where the father or overseer is of a mechanical turn of mind, but where otherwise it is a good plan to take at least a short course at the Agricultural College where traction and gasoline engineering are taught and where the setting up, operating and care of farm machinery are given large consideration.

Machinery is expensive at best and since the usefulness and lasting qualities of farm implements can be greatly increased by knowing all about their construction and how to keep them in perfect repair, the necessity for training of that character becomes obvious. The average binder or mowing machine often is thrown aside as worn out when perhaps nine-tenths of

its parts are practically as good as new. The boy that understands machinery can readily lengthen the "life" of that tenth that gives out, from one to several years, by making timely repairs or by better adjustment of the parts, and thus in the matter of prolonging the usefulness of farm machinery he can save the cost of his education every year of his active life.

The short courses of study also embrace many practical things that relate to soils, fertilizers, silos, breeds of livestock, feeds and feeding, seed testing, drainage, conservation of moisture, etc., all of which make the business of farming more agreeable as well as more profitable. To be a good judge of livestock alone will annually repay the average farmer many times the cost of his education, provided he handles livestock. If he does not handle livestock, he will not, except in rare instances, ever have much to lose, unless he begins life on virgin soil.

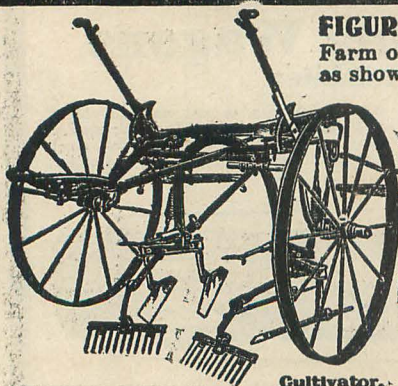
While it is desirable to learn all that is possible about farming as well as all about the sciences that are related to the subject, yet where that is out of the question, even a short course of study goes a long way toward substituting pleasure for drudgery on the farm and success for failure in managing the business of the farm.

When some of us older men were boys the cradle, scythe, pitchfork, and hand rake were the harvesting implements in common use. Those were more strenuous

INCORPORATED
1901

Towers' System of Surface Culture

SALES
14348
1912



FIGURES OF A COMPETITIVE TEST, UNDER THE SAME CONDITIONS, at the Farm of the Co-operator with U. S. Dept. of Agriculture, Oregon, Illinois, give results as shown below (reported by Samuel Ray, "farmer"):

"J. D. TOWER & SONS CO. CULTIVATOR, in a fair, open competition with six and eight small shovel cultivators, with similar soil and conditions, showed 15% greater yield of corn, ten days' earlier maturity, 25% less draft and 30% easier management, with the 'Tower' than with any other. This was in the year 1910, the dryest in ten years."

This cultivator always bears the word "TOWER" on the tongue. Our illustrated booklet, free, tells you all about this line of implements for use in the field, orchard and garden. They furnish greater returns for labor of man and team. Write us. We are originators of surface cultivation.

J. D. TOWER & SONS CO., 68 th St., Mendota, Ill.



One Right Way.

times than are now experienced and the element of drudgery was not so easily avoided, for the work was slow and the hours necessarily long-drawn-out. With modern machinery, however, the work goes forward with great rapidity and something like reasonable hours of labor can be observed. Human brawn is taxed less and brain exercises larger influences on the farm than half a century ago.

With modern farm implements and the new education, for the average young man farming is bound to become as fascinating and far more profitable than merchandizing or many of the professions. The boy that gets a farm and an education to match it will live on Easy Street all his life—or may do so if he will.

Work in itself is not degrading. It is healthful, inspiring, and conducive to long life. "Happy is the man that has to work and working finds the things he likes to do."

There are more mouldy minds and rusty nerves in town than in the country. The world owes more to overalls and shirt sleeves than to cuffs and collars.

Then the girl—the future housewife and homemaker—must not be neglected. Her education is as important as that of her brother. The school men have decreed that her education shall be the same, yet common sense decrees differently. She should have no less education but in many things it should be different. Her life-work will differ from that of her brother and so her education should be different. Her mother's lot may have been sadly tinged with drudgery and for that reason both she and her mother may decide that music or stenography would afford her an easier life. Be not deceived. Music is among the impossibles and the business world is not hunting for stenographers. On the other hand, many stenographers are hunting for employment.

A few labor-saving devices in the kitchen and basement, a little fixing up about the house and dooryard, the installation of fixtures that will provide running water for kitchen, bath, and toilet, together with hot air or hot water heating plant will change the mind of both wife and daughter. They deserve the best there is in the way of modern conveniences and should have them. No farmer can afford long to deny his family the best there is in the way of home comforts. Death comes soon enough and often when not necessary, but comes because the lack of these things invites him to do so.

Doctor bills and funeral expenses too often result from saving the smaller sum of money that should have been used to make life tolerable and in this way both death and the doctor often may be cheated out of their victims.

Idleness and drudgery are evils that should be avoided, while the comfort of the family is always a paramount issue.

Who Can Make the Best Car for You?

The Case "40" is made by the J. I. Case T. M. Company, Inc., at Racine, Wisconsin. You know what this company stands for. For 70 years it has given thousands of customers the finest machinery in its line. These same customers are buying Case Motor Cars. The Case Reputation is at stake in these cars, just as it is in all Case machinery. We can and do make the best "40" that runs. Note the reasons:

We Know American Roads

For 70 years we have made machinery to travel country roads in every section of the American Continent. No concern knows so well what these roads demand. No other car that we know is equally fortified against all American road conditions.

How We Can Afford These Values

When we started making motor cars we didn't create a new business. We had 10,000 dealers and 65 branch houses before a car was made. We saved that selling expense.

We are capitalized at \$40,000,000. We saved the salaries of officers, sales and advertising departments, rent and other over-

head charges. These costs are added to the price of other cars and are costs that the buyers pay.

We Put Them Into the Car

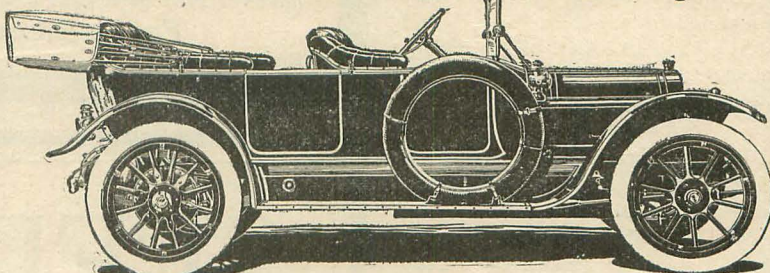
We put all these savings into the car. You pay nothing extra for them. We are able to give them. You might as well have them.

We could save on our motors by using cheaper materials. We could use cheaper clutches, drive shafts, axles, wheels, and save in other essential points. We could cut our assembling cost in two, and this is one of our largest costs.

Case extra values amount in each car to several hundred dollars.

CASE FORTY

The Car With the Famous Engine



5-Passenger Touring, Fully Equipped, \$2,200

Westinghouse Electric Starter; Westinghouse Electric Lighting System for all Lamps; Side and Tail Lamps, Combination Oil and Electric; Warner Autometer; Electric Horn; Rain Vision Ventilating Windshield; English Mohair Top, Side Curtains and Cover; 37x4½-inch Tires; Firestone Universal Quick-Detachable Demountable Rims; 124-inch Wheel Base; Three-Quarter Elliptic Springs; 4½x54-inch Cylinders; Brown-Lipe Transmission; Timken Full Floating Axle; Rayfield Carburetor with Dash Adjustment; Bosch Magneto, Dual System Single Point Ignition. The usual Tools, Tire Repair Kit, Jack, etc. And in addition Extra Tire and Tube on Rim, Extra Tube separate, Tire Cover, Tire Chains and Handy Work Light on long wire.

Mail the Coupon—Have the Catalog

Cut out and mail it now, while you think of it. Don't buy a car until you know what the Case has done. Note the equipment that comes with each car. Observe its style and finish.

**J. I. Case
T. M. Company, Inc.
Racine, Wis.**

Case Cars are sold through
11,000 Dealers and
65 Branch Houses

Factory Branches at

J. I. Case T. M. Company, Inc., (105)

659 State Street, Racine, Wis.

Send me Case Catalog describing Case "40," \$2,200, and Case "30," \$1,500.

Name _____

Town _____

State _____

FARGO, N. DAK., MITCHELL and WATERTOWN, S. DAK.

DESCRIPTION OF COVER ILLUSTRATION

Princess Teake

A pure bred Holstein, ten years of age. She was bred by Jos. Glennie, Longburn, Man., Canada, and purchased of Geo. P. Grout, Parkdale, Man. She is a large up-standing animal and lacks the capacity one would expect to see in such a large cow. Her udder is small, yet it is well proportioned, and she produces better than one would expect, judging from the size of her udder. She is proving a very profitable cow in the herd.

Lena

She is a high grade Holstein cow. Her age is not definitely known, but she is probably eight or nine years of age. She was bought of a farmer near Fargo, in September 1906. In conformation, Lena is very typical of the Holstein type. She is a little smaller than the average of the breed and lacks the requisite refinement about the head. Her udder is large, but is cut up too much between the quarters. She did not freshen from November 26, 1907 to July 11th, 1909, but aborted in the meantime.

Madison Miss Ormsby

Madison Miss Ormsby is a pure bred Holstein and was only twenty-two months old when she freshened in 1909. She is of a refined dairy type and showed unusual promise of being a high producer when she freshened in 1909, but went off her feed a few weeks after calving and did not recover her original flow of milk, otherwise she would undoubtedly have made a good record as a first calf heifer. She was purchased when about eighteen months of age of Leonard W. Gay, Madison, Wis.

Daisy 2d

Daisy 2d is a daughter of Daisy and is therefore a three-fourths blood Jersey. She was three years of age May 19th, 1909. She is a heifer that has a good conformation, showing considerable dairy tendency.

PLANT CORN

WHY PLANT IT?

W. C. Palmer, Agricultural Editor,
N. D. A. C.

The Extension Department of the North Dakota Agricultural College is sending out Extension Poster No. 3. The main cut represents the relative size of wheat planted on corn land and wheat after wheat. The yields are also represented. (These are averages on the 24 North Dakota demonstration farms 1906-1912). The yield of wheat after wheat is twelve and three-fourths bushels—wheat on corn ground 20 bushels, or an increase of 57 per cent.

The other cut gives the effect of corn on the three following crops of wheat.

(Average fifteen year's work North Dakota Experiment Station). It is surprising to note that more wheat is produced in the three crops of wheat following corn than if wheat were grown the four years. Four years wheat gave fifty-nine and three-fourths bushels, while the three crops of wheat after corn gave sixty-four bushels, with thirty-three bushels of corn thrown in. When the corn was manured the yield was; corn thirty-nine bushels and the three following crops of wheat seventy-two bushels. If corn were grown on all the wheat land in the state every fourth year the crop of corn would be sixty-six million bushels and the increase in the yield of wheat would be eight and one-half

million bushels. In case the corn was manured the increase in wheat would be twenty-five and one-half million bushels with seventy-eight million bushels of corn thrown in.

The following reasons are given for growing corn:

MINNESOTA 13

Best Corn for the Northwest.
Carefully selected and graded.

TEST 93%

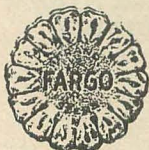
PER BUSHEL \$3.50

LISBON CORN CO. Lisbon, N.D.

SEED CORN FOR SALE 300 Bushels of Northwestern Dent, and Ransom County Yellow Dent. Grown and Matured here in Ransom County. The kind you must plant, if you want to get Ripe Corn. Address

W. E. CHISMAN

LISBON, N. D.



NORTH
DAKOTA
GROWN

SEED CORN

KILN DRIED,
SELECTED
AND TESTED

The best Seed corn we have ever offered. It pays to plant the best and that is what you get when you buy from us. Order today—the supply is limited. We have a good stock of very high grade Canadian Marquis Wheat.

Alfalfa, Clover, Timothy and grass seeds are cheaper this year, and our stock is of the very highest test and will prove their worth when harvest time comes. Your order should not be delayed if you want good seed. Send today for our 1913 catalog, free

Fargo Seed House Dealers in strictly high-grade seeds.
FARGO - - - - - NORTH DAKOTA

SEED CORN

North Dakota and Northern
Minnesota Grown

MILLET - GRASS SEED Seed Potatoes

We want to buy Brome Grass, Beardless Barley and good Seed Oats. Also car-load of Broom Corn Millet. Send samples and quote price wanted.

N. J. Olsen Co., Moorhead, Minn.
"The Red River Valley Seed House"

I. The Cultivation Given Corn

1. Kills weeds
2. Saves Moisture
3. Reduces Grain Diseases
4. Increases Available Plant Food
5. Improves Physical Condition of soil
6. Prepares Best Seed Bed for Grain, Alfalfa, Clover and Grasses.

This results in an increased crop of wheat the next year: seven and one-fourth bushels or 57 per cent more on corn ground than wheat after wheat.

II. Corn Will Produce More Stock Food per Acre than Any Other Crop Except Possibly Alfalfa.

1. Corn is the best fattening food for

finishing hogs and steers for market.

2. Corn ensilage is one of the best foods for the dairy cow and is also good for beef cattle. It is relished by cattle at all times of the year and can be used to good advantage even in the summer time when pastures are short.

3. Corn fodder is an excellent roughage



Dealer's Estimate \$1400 - Ours \$700

This is a true story—the name only is changed. Bill Jones, a Dakota farmer, sent the bill of materials for his new house to three nearby lumbermen. Their estimates were \$1400, \$1672 and \$1382. Jones thought them high, yet knew not how to avoid being held up. Fortunately, he saw our advertisement in his farm paper. At once he sent his bill of materials to us. A week later he had our estimate of \$700. Needless to say he sent us his order. He saved \$700, and was more than delighted with his lumber. We can save you money just as we did "Bill Jones."

We Own Forests, Railroads and Mills

Our forests cover thousands and thousands of acres. Billions and billions of feet of standing timber—fir, spruce, cedar, hemlock and western soft pine, in almost inexhaustible quantities. We do our own cutting, logging and railroading. Six great mills convert this timber into highest quality lumber and millwork. Their output is 20 to 30 cars per day. All the benefits of this wonderful cost reducing organization is yours.

We Sell You Direct—Not One Middleman gets a Profit

Lumber as purchased from your local dealer costs too much, because there are too many profits included in its cost. Five middlemen—wholesaler, jobber, commission man, salesman and dealer—all get a fat profit, and it all is included in the dealer's price to you.

40% to 60% Saved on Lumber of Celebrated Quality

Our lumber comes from the famous "Puget Sound" Region. It's beautiful stuff! No sap or large knots. Resists decay. Lasts years and years. Comes clean and straight. No warping or twisting.

Immediate Shipments—Quick Delivery

We carry immense stocks. Can ship you anything you want in the way of lumber and materials. Make all shipments within an average of 24 to 48 hours. Seven great transcontinental railways hurry our shipments to destination—reach points west of Mississippi within an average of two weeks. Deliver our shipments at your station at 40% to 60% saving over prices of every competitor, local or otherwise.

We Guarantee You Satisfaction

We take all the risk of pleasing you. We back every shipment with the guarantee that it will grade better than trust or combine standards and satisfy you in every way, or money refunded.

One Estimate will Win You

We ship everything for building complete; lumber, sash, doors, shingles, millwork and paint. Send us your bill of materials. Our prices, delivered your station, will open your eyes with wonder. Let us show you in actual figures, how much we can save you on the building you're planning. If you're not ready for actual figures, post yourself on our prices anyhow.

Mail This Coupon Today for Catalog and Price List

Hewitt-Lea-Funck Co., 661 First Avenue, Seattle, Wash.

These Prices Save You 40% to 60%

(F. O. B. Seattle)
These few items are a mere glimpse at the hundreds of bargains in our big catalog of lumber and millwork. Write for it.

Clear red cedar shingles, per M	\$2.20		2 ft. x 6 ft. x 8 x 13-8 5 cross panel, \$1.50
Extra *A* red cedar shingles, per M	\$1.50		
Clear fir flooring	\$23.00		24 x 24 13-3 2 light, 95c
2 x 6 fir, per M	\$12.00		
Clear fir casing, per lineal foot	11-2c		
"A" red cedar bevel siding	\$24.50		
2 x 4, 14 and 16 ft. No. 1 common fir, per M	\$13.00		

Hewitt-Lea-Funck Co.

661 First Avenue, Seattle, Wash.

Kindly send me your catalog and list of prices on lumber and building supplies laid down at my station.

(Be sure to write plainly)

Name _____

Address _____

Business _____

I am planning to build as follows: _____

for horses, cattle, and sheep.

III. To Hold Snow.

If the stalks are left standing considerable snow will be held on the field. If but one-fourth of the stalks are left standing about half as much snow will be held.

It is summed up as follows:

To Get the Full Benefits from Corn:

1. Manure the land.
2. Plow reasonably deep.
3. Test seed before planting.
4. Plant early.
5. Plant in hills.
6. Cultivate clean.
7. Fatten hogs and steers by pasturing on Squaw corn.
8. Put corn in silo for dairy cattle.
9. Grow corn that ripens. It has the most food value.
10. Home grown seed produces the ripest corn.
11. Select seed from field before frost.
12. Put in rotation with alfalfa, clover or grasses.

HOW TO PLANT IT?

W. R. Porter, Supt. North Dakota Demonstration Farms

Seed. Select a desirable variety such as Northwestern Dent, Golden Dent, Rustler's White Dent, Minnesota 23, Mercer Flint, Triumph, or Dakota White. Test every ear of corn before it is shelled. Plant corn that tests 100 per cent germination.

Soil Preparation. If heavy clay, fall plow, five to seven inches deep. If soil is light and inclined to blow readily, spring plow, four to six inches deep. In either case, manure at the rate of ten loads per acre during fall or winter. Disc early in the spring. This starts weeds and saves moisture. Before planting disc and harrow sufficiently to make a compact and fine mellow seed bed. Plant May 10th to 20th, if the weather is favorable. Plant

in check rows 42 inches apart with four kernels per hill. See that no vermin such as gophers eat the seed after it is planted. Harrow the field before the corn is up and once or twice after it is four inches high. It is often advisable, if land is weedy, to cultivate before the corn is up. Follow with the harrow. Cultivate 4 to 7 times.

When to Cultivate. Whenever the weeds begin to grow. Whenever there are indications of a prolonged dry spell. Whenever heavy rains fall. Whenever a crust forms and whenever the soil is so wet that a granular mulch is formed.

HOW DO YOU CULTIVATE YOUR CORN?

We wonder how many farmers are still following the good old fashioned way of cultivating their corn. There used to be, and we wonder if there are yet, farmers who like to see the corn roll up after the cultivator? They insist on cultivating deep, little realizing what this deep cultivation means to the corn plant. The leaves roll up because of the severe root pruning which always goes with deep cultivation.

The plant gets its food thru these roots and when they are destroyed the plant begins to starve. The first symptom of this starving condition is the rolling of the leaves.

The growing corn plant requires large quantities of water. This water dissolves and carries the plant food of the soil to the plant cells and after fulfilling this mission is exhaled or thrown

4c
to
16c
each

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FAIRMONT, MINNESOTA

SALZER'S

Bonanza Assortment of Vegetable Seeds 16c

Get this for your kitchen garden. For 16c postpaid. Worth 35c. Sure to please. 1 package each:

Cabbage	Carrot	Cucumber
Lettuce	Onion	Radish

Above collection and six big packages of choice flower seeds 25c
12 packages in all.

or send 30c and we add the wonderful New Earliest Red Riding Hood Tomato—alone sells at 15c. Catalog and Premium List FREE.

John A. Salzer Seed Co. 215 So. 8th St., LaCrosse Wis.

The Luverne Nursery :

DIRECT FROM THE GROWER TO THE INTELLIGENT PLANTER

The Hardest varieties of Apples, Crabs, Plums, Compass Cherry, Small Fruits; Evergreens, Forest Trees. The True Norway Poplar, the Hardy Success Crab; also the only Hardy Red Raspberry, the Sunbeam. The choicest lot of Peonies in the Northwest.

WRITE FOR PRICES.

Satisfaction Guaranteed.

C. E. OLDER, LUVERNE, MINN.

SEED CORN- We have saved a choice lot of Home Grown Seed Corn, carefully selected and Fire-dried.

Write for particulars and prices.

SUTTON & AHERIN

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FARGO FOUNDRY CO., Fargo, N. D.

The Largest Foundry Machine Shop and Boiler Shop in the Northwest. A large stock of Structural Steel and Iron always on hand. Full Line of Blacksmith Tools for Farm use. The Biggest plant in the Biggest Little City in the world.

We make a specialty of modern Fire Escapes. Best Tools and Skilled Workmen is the secret of our success. While in our city call and see us and judge for Yourself.

Oxy-Acetylene Welding in connection.

End of North Bridge, N. P. Ave.

off thru the leaves. When the roots are cut the supply of water is cut off but the exhalation continues. The result is the rolling of the leaves. The same thing occurs when the soil becomes dry and the weather continues hot. The leaves roll up during the day and open at night when evaporation is much less rapid.

Experience has shown that this root pruning, due to deep cultivation, very materially reduces the yield of corn. The reason is simple when it is understood and yet the "old fashioned farmer" goes on in the old fashioned way and pays a high price for the privilege of remaining in ignorance of these important facts.

There are implements devised to reduce this root pruning to a minimum. By their use the top two or three inches may be cultivated to keep down weeds and reduce surface evaporation. The corn plant is left in full possession of those root feeders so vital to the full performance of the growth function.

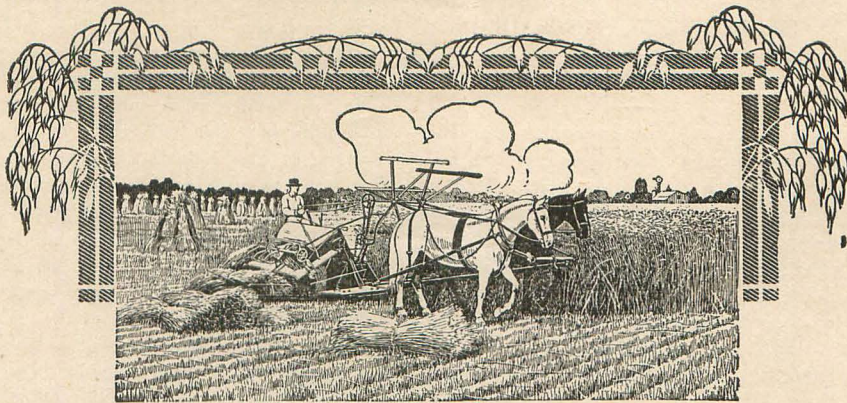
Wilson and Warburton in their excellent book on "Feed Crops" state:

"It is impossible to state any arbitrary depth at which it is desirable to cultivate corn. The object of the cultivation should be to leave the soil in a loose, mellow condition on the surface and to destroy any weeds that may be growing, with as little injury as possible to the corn roots.

"Any one can convince himself, by careful observation, that the roots of corn quite thoroly occupy the entire soil area between the rows by the time the plants are 12 to 15 inches high.

"The practice followed by the best corn growers at present is to cultivate deep at the first cultivation, if deep cultivation is necessary at all, and then to cultivate as shallow as is consistent with keeping the soil in good condition and free from weeds."

Common sense rather than tradition or precedent should rule in the corn field as well as elsewhere. The corn crop is one of the most useful and economical crops for the dairy farmer and he should make the most of it.—Hoard's Dairyman.



Yours Is the Work That Counts

YOUR season's work means a great deal to you.

After you have fertilized your soil, plowed, harrowed and perhaps rolled it, planted your seed in the carefully prepared seed bed, tended the growing crops and watched the grain ripen, you have a right to a full harvest. You can be sure of a 100 per cent return from your fields when you use efficient modern machines for your farm work. You would certainly be taking an unwise and unnecessary chance if you bought a machine that might not do your work as it should be done. To be on the safe side, buy I H C harvesting and haying machines and tools, all of which have proved their reliability through years of experience with harvesting and haying conditions on farms in every part of this country. These dependable machines may be identified by the following well-known names:

**Champion Deering
McCormick Milwaukee
Osborne Plano**

There is no better time than the present to investigate and decide which machine is the best for you to buy. The opinion of your neighbors is valuable, and should help you to come to the right decision. All of the machines are so simple that they may be handled by ordinary farm help. They are so efficient that there is no question of their capacity for cutting, binding, and saving all the grain in any field, whether it be heavy or light, tall or short, standing, down, or tangled. The haying machines are as efficient as the harvesting machines. When you buy an I H C machine you do away with any chance for unreasonable delay at harvest time. Should anything happen to your machine, it is possible, no matter where you may be, for you to obtain repairs in a few hours' time. Our efficient organization, which includes nearly a hundred general agencies carrying complete stocks of repairs, and over thirty thousand local dealers who carry repairs for the machines they handle, is the most practical guarantee you can have that your grain will be cut and bound at the proper time, and without delay and annoyance.

To secure the best results from these good machines, it is necessary to use a strong, smooth binder twine of reliable quality. I H C binder twine is made under seven brand names—Champion, Deering, McCormick, Milwaukee, Osborne, Plano, International, each in four grades—pure manila, manila, sisal, and standard. Each ball of twine marked with any of these names is guaranteed for length, strength and uniformity of size and quality.

Yours is the work that counts. Make sure that it is done as it should be done by seeing the I H C local dealer and buying from him the I H C harvesting and haying machines, tools, and binder twine that you will need for this harvest. He will supply you with catalogues and full information, or, write

WANTED A MAN

in your town to sell our prairie grown trees and fruits. Salaries paid weekly. People want our trees because they can stand the drying winds, short seasons and cold winters. Write at once for particulars.



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International Harvester Company of America
(Incorporated)

Chicago

U S A



CROPS FOR HOMESTEADERS

By Prof Thos. Shaw

Very many homesteaders are just now beginning their work on homesteads which they have taken. It is of the utmost importance that they shall begin right. This paper will discuss that question and more especially with reference to the needs of homesteaders who have families. It is specially important that they shall be able to grow food for themselves and the animals that they have when they come to their claims. Under judicious management they may do this, but without knowing how, they may utterly fail.

It is presupposed that every man who moves onto a homestead farm

with a family will take with him to that farm four horses to enable him to plow his land, a cow or two to provide his family with milk and butter, a brood sow that will nourish pigs to give meat the following winter, and a few hens to provide him with meat or its equivalent in eggs the first summer. He should also have enough grain with him to feed his horses, his swine and his fowls until he can grow some the following autumn.

What money crops can he grow the first year? Only two, one is flax and the other is durum wheat. Of these flax is the surest as it will bear up better under dry conditions, should the season prove dry, than any other cereal crop. But to be sure of a crop it should not be sown later than early June. If

durum wheat is sown it cannot be sown too early. The flax is sown at the rate of one and one-half pecks per acre, and the durum wheat at the rate of 4 pecks per acre, of course it would be better in the long run to summer-fallow all the land broken the first year, and to sow the bulk of it to winter wheat the following August, but if the homesteader must have some money crops, these should be flax and durum wheat.

Which are the crops that can be grown for the livestock? The homesteader can grow for these oats, to provide food for horses, barley and peas to provide for the cow or cows in winter, and hullless barley* of the white variety to provide food for the swine the following winter, and also to provide food for the fowls.

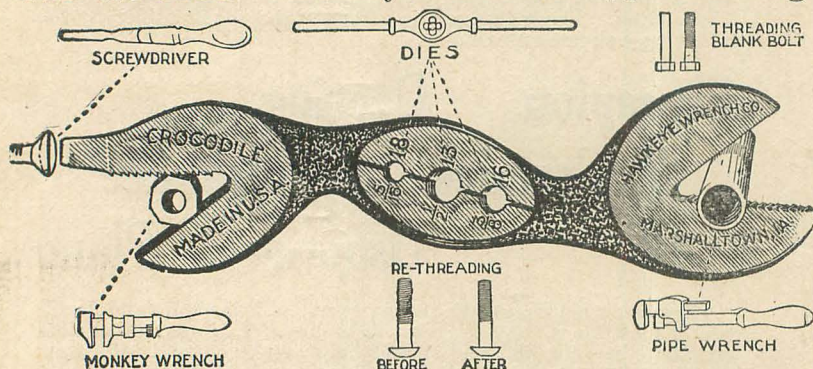
The oat crop is not so sure a crop as the durum wheat on breaking, but it may be made to furnish much food in an average season. In a very dry season the results would be disappointing. It would not be necessary to thresh the oats for the horses as in some newly settled section it might not be easy to get a machine. The pea and barley crop should be drilled in, using three pecks of peas and two of barley to the acre. These would be cut when in the rough stage, and they would be fed to the cows as hay. The white hullless barley could be sown at the rate of three to four pecks per acre and it would furnish food to swine and fowls the following winter, either in the threshed or the unthreshed form.

Corn is one of the best crops to grow to furnish food for horses or cows in winter. Good crops can be grown on new breaking. To grow these in best form, the land should be broken five to six inches deep. It should be packed with a disk as soon as broken. A fine mulch should be made on it with the harrow. The corn should be planted in hills three and one-half feet apart each way. The varieties to plant include the Mercer Flint and the Northwestern Dent. They should be planted as soon as the danger from frost is past. The cultivation may be given in great part by the harrow. Squaw corn planted thus in hills will furnish grain for swine and fowls, but it will not furnish much fodder.

To provide for the home a liberal supply of potatoes should be planted. They will grow well in breaking. The land may be prepared as for corn. In this way an ample supply of potatoes may be obtained for home use. If white navy beans are sown on sod-land and broadcasted, they are fairly sure to produce a good crop, and the same is true of rutabagas. The only labor involved will be the sowing and harrowing. Vegetables may also be thus grown. In these ways the homesteader may do much to lessen the outlay the first season.

Something You Need EVERY DAY

At this season of the year. A **Combination Crocodile Wrench**—six handy tools in one. 8½ inches long.



You can get this Crocodile Wrench, *Farm, Stock & Home*, Minneapolis, Minn., the country's greatest semi-monthly farm paper, and the

North Dakota Farmer

ORDER NOW---This is a great offer.
Use coupon below.

**ALL
FOR
\$.75**

North Dakota Farmer Lisbon, N. D.

Enclosed find \$.75 for which you are to
send me **The North Dakota Farmer**
Farm, Stock & Home and Combination Crocodile
Wrench.

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The Demand and Some Precautions to Follow in Purchasing Dairy Cattle

By Prof. W. B. Richards, N. D. A. C.

The demand for all classes of cattle by the farmers of North Dakota has been unprecedented during the past winter. The demand for dairy cows of all descriptions has been especially strong. This demand has been difficult to fill without paying a long price for them, and then they have not been available in many cases.

WARNING UNHEEDED

I believe that the writer is justified in hurling at the farmers of this state the expression "I told you so." Many times, in years past, he has warned the farmers of this state of the folly of selling their breeding stock. Whenever grain prices reached the high point. He has also warned them of the dangers of the policy of deferring the production of cattle and other livestock upon their farms, for fear that they would find a scarcity in due time, which would make the price of breeding stock almost prohibitive. It did not take a prophet or an extremely brilliant mind to read the hand writing upon the wall. Any one with average intelligence could have done so providing he studied with some care the conditions pertaining to livestock production in the different parts of this country the past few years.

CAUSE FOR THE DEMAND

A large demand for dairy cows in this state comes about because many farmers all over the state have found it necessary to give up exclusive grain growing, and have a desire at the present time to keep some dairy cows.

This demand will have to be filled largely by purchases of either grade or pure bred cows and heifers from the other dairy states. In fact, many cows and heifers have been shipped in to the state during the past few months, from the dairy states to the east of us. Not all of the stock shipped into the state, has been well bought. Some of the pure bred cattle purchased has not been as good as they should be for the prices paid. This statement is also true of many of the grades purchased. Some have reported cattle reacting to the tuberculin test after they have been brought into the state. Others found to their surprise, that their cattle possessed contagious abortion, which was transmitted to all the cows in their herd, practically destroying the efficiency of the herd for some time. This is not to be surprised at, because anyone experienced in buying dairy cattle knows that there are many unprincipled men in the dairy business in every state. It is the specu-

lator in dairy cattle who is no doubt, however, responsible for the sale of much of the diseased cattle mentioned.

HOW TO AVOID GETTING DISEASED CATTLE

If a farmer is not a good judge of dairy cattle, he should take some one with him, when buying, who knows the merits of dairy cattle and something of the tricks of the trade, for there are many. I should also advise the buyer to make inquiry about the reputation of the seller, before purchasing of him, and buying only from good reputable dairymen. Even if this precaution is taken, there is danger enough of getting undesirable cattle.

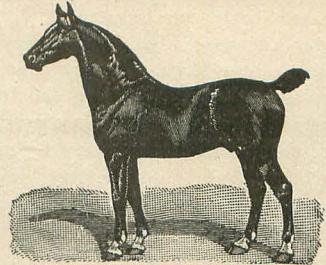
To avoid getting cattle from a herd which has abortion, find out how many heifers the seller has in the herd, demand to see them. If there are but a few on hand, in proportion to the cows in the herd, the chances are, they have been lost because of abortion in the herd. Few good dairymen sell many of their heifers, be-

cause they prefer to test them out first.

To avoid tuberculous cattle, demand to have them delivered at once to a central point where you can test them yourself or

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

2,000 Gophers Can Be Killed For 75 Cents!



A 75-cent box of Kill-Em-Quick contains enough *deadly doses* to kill 2000 gophers. And there are that many on every small farm in gopher-infested regions. Besides, every pair raises from twenty to thirty-six young ones per year, Kill-Em-Quick kills gophers for less than one cent per acre. It is *guaranteed*. If it fails, you get your money back promptly.

Mickelson's Kill-Em-Quick

has a peculiar odor and taste that *attract* gophers, they *eat* it, and it is so deadly that the merest atom *kills* a gopher. No other poison compares with it. Others must be greatly weakened, are bitter, and are *not* eaten by gophers. Besides, you are never *sure* you are getting the pure, unadulterated poison. It's different with Kill-Em-Quick. You get what you pay for. It is

Absolutely Guaranteed

An hour after spreading it you can go into your fields and find dead gophers all around. It kills them before they can get back into their holes. They leave tender shoots of grain for Kill-Em-Quick. You ought to use it. Get a package at once—have it ready for the first gopher. Kill-Em-Quick is made in 75c and \$1.25 sizes. Get it from your druggist—or sent direct, prepaid, on receipt of price. Guarantee with every box. ANTON MICKELSON, PRES.,

Mickelson-Shapiro Co.

1429 Washington Ave. North, Minneapolis, Minn.



FREE

—this attractive, handy leather coin purse—the finest you ever saw. In every box of Kill-Em-Quick there is one coupon. Send two with the one in this advertisement and purse will be sent you. Get two boxes Kill-Em-Quick at once. Clip coupon in this advertisement, send all three to us and get this coin purse free.



Free Coin Purse

This coupon and two coupons from Mickelson's Kill-Em-Quick entitle you to one leather coin purse free. Send no money—just this coupon and two coupons from Kill-Em-Quick packages.

Mickelson-Shapiro Co.

1429 Washington Ave. N., Minneapolis, Minn.

have a competent veterinarian do it for you. Agree not to accept them until they have been tested and passed. Removing them from the premises of the seller at once obviates the seller of injecting into them tuberculin to prevent them from re-acting to the test.

AVOID BUYING ANY MORE THAN NECESSARY

Considering the high price of all classes of dairy cattle, and the danger of getting diseased cattle, our farmers should avoid buying any more than is necessary from outside of the state. If they have cows, altho somewhat inferior, they should keep them until they are sure that they can replace them with better ones. By using a good dairy bred bull of the breed selected, a class of very desirable dairy heifers can be raised from very ordinary cows. At this crisis in the cattle business, no cow that is capable of raising a calf should be sent to the shambles. This statement is especially true under the conditions in North Dakota at the present time, due to the fact of the scarcity and desirability for more cattle in the state.

CLOSER UNION ESTABLISHED

E. J. Weiser, President of the Better Farming Association, is Enthusiastic

The United States department of agriculture will co-operate with the North Dakota Better Farming Association.

This was brought about thru the efforts of Thomas P. Cooper, the secretary of the state association, who accomplished much during his recent visit to Washington, and it means a great deal to the state.

Under the terms of the agreement the Better Farming Association acts jointly with the federal department of agriculture in carrying on the various lines of field demonstration work developed by the association. Thomas Cooper, the director in charge of the work in the state, becomes the joint leader representing the department of agriculture, while the various field men Associated with him jointly represent the United States department and the Better Farming Association.

This agreement does not in any way affect the method of organization, the form of work that is carried on, or the method of financing and county co-operation that has been adopted. It

brings together more closely the agricultural forces of the northwest and to a large extent guarantees the permanency of the work of the Better Farming Association.

While the Better Farming Association has always worked under a memorandum of understanding with the department of agriculture, it is believed that this new agreement will bring about closer relationships. This in connection with the act passed by the last legislature and signed by Governor Hanna which authorizes the county commissioners to levy a tax of not to exceed one-half mill per dollar of assessed valuation for agricultural work in the county will insure a much greater agricultural development of the state. The association now employs a field force of twenty-one men and but few additions can be made the coming two years.

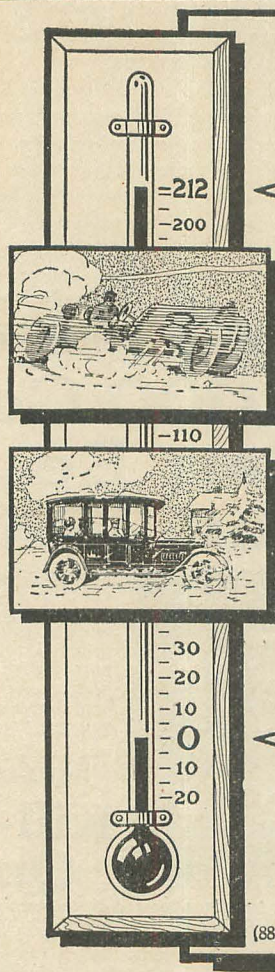
E. J. Weiser, President of the North

Dakota Better Farming Association in speaking of the above, remarked:

"North Dakota should feel exceedingly proud over the fact that the United States agricultural department will co-operate with the state of North Dakota in this work, for this is the first time in the history of the nation that the federal government has gone into the matter in this way and has agreed to co-operate with a state. It shows that the work that has been done in this state is far reaching and is being noticed not only by the United States government, but by the people of all the other states."

DAIRYING FOR NORTH DAKOTA

"The organization and operation of milk testing associations and co-operative creameries" is the subject matter of Bulletin 102, North Dakota Experiment Sta-



Maintains Its Body at High Temperatures

No matter how fast you go on hottest days, Polarine lubricates every part perfectly, maintaining the correct lubricating body at any motor speed or heat.

It saves friction, wear, upkeep cost and repair bills.

It flows just as well at zero.

Polarine insures the greatest resale value of your car.

Made by the World's Lubrication Specialists.

Standard Oil Company

(AN INDIANA CORPORATION)

Makers of Special Lubricating Oils for the Leading Engineering and Industrial Works of the World

Flows Freely at Zero

Polarine

FRICION REDUCING MOTOR OIL

DAKOTA WELDING & MFG. COMPANY

Large Welding Plant and Machine Shop

Expert welders and machinists of ALUMINUM gear and crank cases; manifolds and housings; CAST-IRON and cracked sectional boilers; cracked or broken cylinders or water jackets; STEEL frames or any broken parts of automobiles or other machinery. We weld cracked steam boilers with our large portable plant at your home.

201 FIFTH ST. NORTH

Phone 926

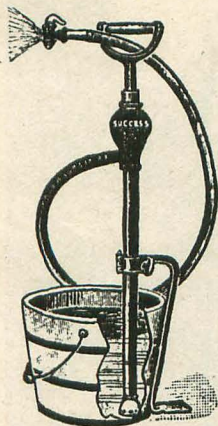
FARGO, NORTH DAKOTA

tion by G. L. Martin, Prof. of Dairying. Creamery plans, equipment, and ice houses are treated. Several illustrations show many of the details of construction. The following is from the introduction: "That North Dakota can make a success of dairying, an inspection of the districts where it has been tried should convince any fair-minded men. In Sargent County, for example, we find the dairy interests very successfully worked into the farming plan and the general farm conditions stimulated and improved by it. In Morton and Oliver Counties, which are among our newer prairie districts, dairying is a thriving industry and the farmers following that line of production are successful and contented."

Among Our Advertisers

A NEW BOOK ON SPRAYING

There has just been received a copy of the book on spraying entitled "Spraying a Profitable Investment." It contains such live matter of interest to every fruit and vegetable grower that we strongly recommend every grower's sending for a copy without delay.



Showing a bucket spray which can be used for throwing a fine misty spray on the seed grain by means of sprinkling and shovelling method.

It is an illustrated book having 128 pages, well worth reading carefully. It tells in an understandable manner the characteristics of the injurious insects, describing them in their various stages while maturing, so that everyone can easily recognize them. Then it indicates how and when they damage the fruit or

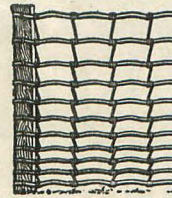
vegetable, at the same time giving the latest proven methods of combatting them. It is equally as valuable to the in-



Showing a good form of compressed air sprayer suitable for treating seed by raking and shovelling method.

experienced as it is to the experienced grower.

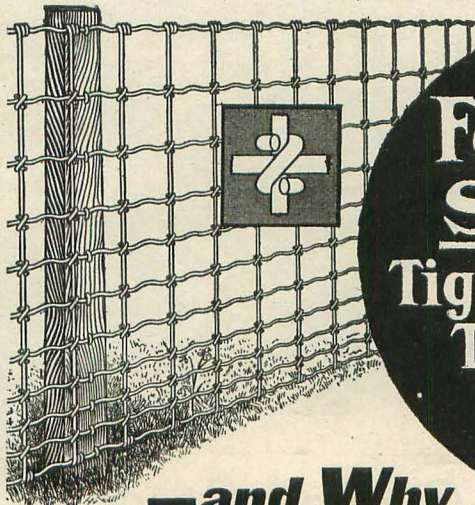
All this information was compiled from data prepared by the largest and most expert growers thruout the country including noted entomologists connected with the various Government Experiment Stations.



Heavy Close 49 in. Fence 24c Per Rod

Steel Farm Gates \$2.95 and up. Galvanized Barb Wire, \$1.55 per spool. Our large catalogue of fences for every purpose, gates, fence tools and supplies with low direct from factory prices sent free to any address.

THE MASON FENCE CO. Box 81 Leesburg, Ohio



The Fence That STANDS Tight and Trim The Whole Year Round

(15)

—and Why

Every farmer knows that a fence which will stay tight and trim through summer and winter must be built to give and take. It must be made of tough, springy wire, and in such a way that in contracting and expanding it will take up as much as it gives out.

There are several reasons why

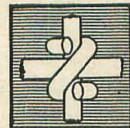
"Square Deal" Fence Stays Tight and Trim the Year 'Round

FIRST: Note that the strand wires are wavy. This gives the fence elasticity—its give and take—keeps it tight summer and winter.

SECOND: The Stay Wires are one-piece from the top wire to bottom one, forming the backbone of the fence, which stiffen and support it, absolutely preventing sagging and bagging.

THIRD: Note the SQUARE DEAL LOCK which double-grips the wires so tightly they cannot possibly slip. It is one of the most important parts of a wire fence.

We use the toughest, strongest wire—draw it, galvanize it, anneal it in our own mills; then weave it into Square Deal Fence and back it with our own guarantee. We know how it is made—the kind of material that's in it—and consequently stand back of it with our Square Deal Guarantee, which insures every purchaser a Square Deal and perfect satisfaction.



Write for Catalog, Prices and Free 2-Foot Folding Rule

We want you to know more about this "honor built" fence. Our catalogue tells the complete story. If you will write for a copy we will send you a Four-Section 2-Foot Rule FREE. Send today before they are all gone.

THE KEYSTONE STEEL AND WIRE CO. 1015 Industrial Street PEORIA, ILLINOIS

**BOTH
3 Years
ONLY
\$1.00**

Threshermen's Review & Power Farming
(Formerly Threshermen's Review)

NORTH DAKOTA FARMER
(Your State Farm Paper)

If you are interested in Power on the Farm and in your State of North Dakota, send \$1.00 for a 3 Year Subscription to both these papers to
NORTH DAKOTA FARMER - - LISBON, NORTH DAKOTA

**BOTH
3 Years
ONLY
\$1.00**

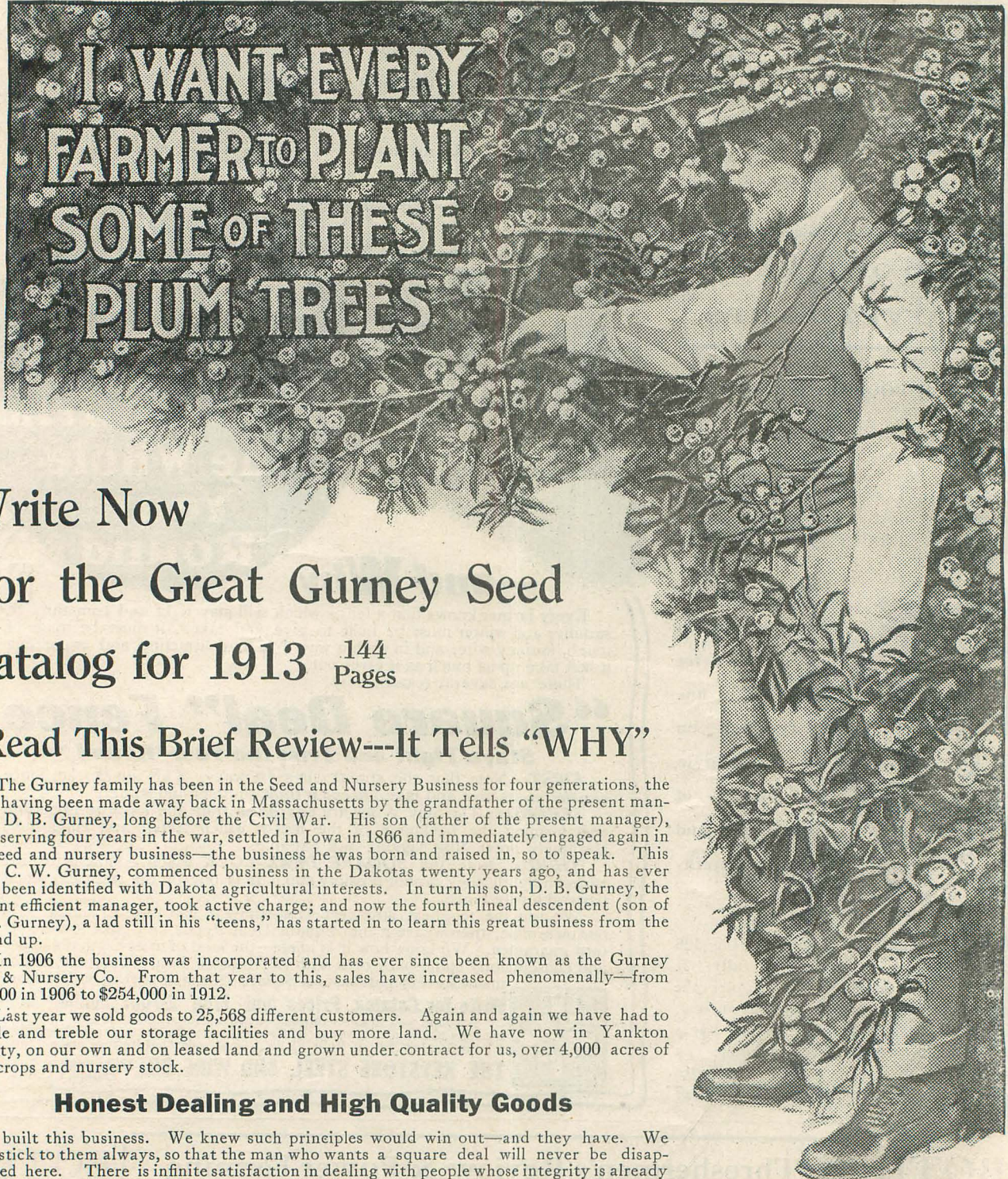
This book is published by The Sherwin-Williams Co., No. 601 Canal Road, Cleveland, O., at a considerable expense. They have advised however, that copies will be distributed to the readers of North Dakota Farmer upon receipt of name and address plainly written on a post-card.

We strongly recommend that you send for a copy immediately.

FENCING THE WORLD

Accustomed as we Americans are to think in big figures and to read of actual

accomplishments that rival the tales of the Arabian Nights, we are frequently startled by the wonderful feats of our American factories. One instance of this kind has just been called to our attention. Right here in the Central West there has sprung up within our day a factory for the pro-



Write Now For the Great Gurney Seed Catalog for 1913 144 Pages

Read This Brief Review---It Tells "WHY"

The Gurney family has been in the Seed and Nursery Business for four generations, the start having been made away back in Massachusetts by the grandfather of the present manager, D. B. Gurney, long before the Civil War. His son (father of the present manager), after serving four years in the war, settled in Iowa in 1866 and immediately engaged again in the seed and nursery business—the business he was born and raised in, so to speak. This man, C. W. Gurney, commenced business in the Dakotas twenty years ago, and has ever since been identified with Dakota agricultural interests. In turn his son, D. B. Gurney, the present efficient manager, took active charge; and now the fourth lineal descendent (son of D. B. Gurney), a lad still in his "teens," has started in to learn this great business from the ground up.

In 1906 the business was incorporated and has ever since been known as the Gurney Seed & Nursery Co. From that year to this, sales have increased phenomenally—from \$20,000 in 1906 to \$254,000 in 1912.

Last year we sold goods to 25,568 different customers. Again and again we have had to double and treble our storage facilities and buy more land. We have now in Yankton County, on our own and on leased land and grown under contract for us, over 4,000 acres of seed crops and nursery stock.

Honest Dealing and High Quality Goods

have built this business. We knew such principles would win out—and they have. We shall stick to them always, so that the man who wants a square deal will never be disappointed here. There is infinite satisfaction in dealing with people whose integrity is already proven thru the passage of many years. Send in your name today for the big illustrated 1913 catalog. It is bigger and better than ever—144 pages. FREE.

Gurney Seed & Nursery Co.

Box 11, Yankton, S. D.

Our Guarantee:

We guarantee seed corn or other seed sent out by us to test to the satisfaction of the purchaser. That is, test it on its arrival and if not satisfactory return it to us at our expense and the money paid together with the transportation charges will be refunded to the purchaser.

Prof N-E-HANSEN

duction of farm fences that makes and sells wire fencing in such enormous quantities that the wire used each year would reach five times around the world. Just think of it—nearly 125,000 miles of wire, every rod of which is made in these mills. And all of it goes into the square deal fence which you will find advertised on page 17 of this issue by The Keystone Steel & Wire Co., 1000 Industrial St., Peoria, Illinois.

This factory has a reputation of producing a very fine grade of farm fencing and one that while very reasonable in price has several special advantages. Briefly they are—Wavy Strand Wires which give SQUARE DEAL FENCE elasticity, springiness and keep it tight and trim; One Piece Stay wires which give extra strength—"back-bone" the manufacturers call it; The Square Deal Self-Draining double-grip lock which won't slip or break easily.

The Keystone Company is offering to send any of our readers interested in farm fencing their latest catalog and a handy 2-foot Folding Pocket Rule. Both free. We suggest that our readers take advantage of this offer.

THE MODERN RAINMAKER

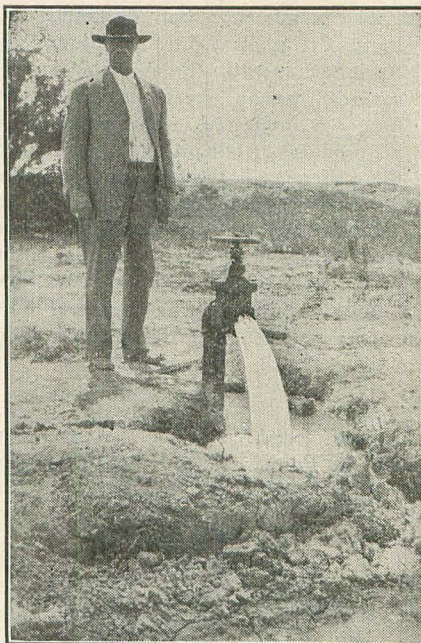
Here is an interesting photograph of one of a small army of farmers who have discovered a comparatively new and highly profitable business by which they can greatly increase their earnings during the off season, boring wells for Farmers.

Progressive farmers everywhere, regardless of rainfall or local weather conditions now consider a good well a **necessity**, because it is the only dependable continuous source of water supply, which every one can have, at small cost, **on his own place**, where it is owned and controlled by himself alone.

The picture shows Mr. A. W. Crandell, of St. Joseph, Ariz., and one of his wells—the sixth of the season, when this picture was taken, last December. Wells like this are worth real money out in that country.

Mr. Crandell uses a Powers Combined Well Boring and Drilling Machine, manufactured by the Lisle Manufacturing Co. of Clarinda, Iowa, and is highly pleased with it. The distinctive features of this machine are First: That it's a one man outfit—one man can run it, and the team which hauls it from place to place furnishes all the power needed to run it; Second: that the same machine both bores and drills. It bores thru any kind of soil at the rate of 100 feet in ten hours, and if hard rock is struck instead of having to abandon the hole, you simply drill thru it with the drilling attachment.

The manufacturers of this machine say that thousands of these outfits are in use all over America from Canada to the Gulf of Mexico, and that many of their owners



make as much as \$2000 and more per year extra money, without interfering with their regular farm work.

This firm will sell their machine to reliable parties on easy payments, and they have a very interesting proposition—one which it will pay every farmer to investigate. For details, address the Lisle Manufacturing Co., Clarinda, Iowa.

TWENTY THOUSAND SHOES A DAY Complete Large New Building to be Used Exclusively for Making Martha Washington Comfort Shoes

Milwaukee's great shoe manufacturing company, the F. Mayer Boot & Shoe Co., has just completed another large factory building consisting of seven stories and basement 50x150 ft., which is to be used exclusively in the manufacture of Martha Washington Comfort Shoes. It is the largest single factory in the country devoted entirely to the manufacture of one type of shoes. Including the new Mayer Martha Washington building, the Mayer factories now have facilities for manufacturing the enormous quantity of 20,000 shoes per day.

The remarkable growth of the F. Mayer Boot & Shoe Co. is a striking tribute to the sterling qualities of Mayer Honorbilt Shoes, as well as to the value of this paper as an advertising medium. Mayer Honorbilt Shoes have been advertised in our columns for years. Our readers must be familiar with them and no doubt many are wearers of Mayer Shoes.

This company has built up an excellent reputation, which it deserves. The quality of Mayer Honorbilt Shoes is known wherever good shoes are sold. Martha Washington Comfort Shoes especially enjoy a tremendous sale. On

account of their great popularity, these shoes are much imitated, and our readers are warned to make it a rule when purchasing to look for the names "Mayer" and "Martha Washington" stamped on the sole.

HOME GROWN SEED CORN

For many years there has been a steady influx of settlers from the corn growing states into the southern part of North Dakota. Immediately upon their arrival they gave their attention to the raising of corn adapted to this climate. So great was their success that the first prize and many others from the state contest last year came to Ransom County. The demand for home grown seeds was so insistent that Sutton & Aherin established the Lisbon Seed House, whose advertisement is found elsewhere, and they have made home-grown, fire-dried seed corn a specialty ever since, furnishing seed to farmers thruout the state, in South Dakota and Montana. Our readers will find them businesslike and reliable.

Among the pioneer livestock advertisers of the state few have had better success at state and county fairs than C. H. Schutt of Fairmount. Among his trophies he counts 128 ribbons, most of them the coveted blue. Mr. Schutt buys sows every year, to infuse new blood into the herd. The one added this year is from the famous Luckin herd, of Disko, Ind., and 's sired by one of the most noted boars in America. The new bull added is Snowball 353642. Besides blooded livestock Mr. Schutt has some fine poultry of standard strains. Now is the time to start a herd or to tone up the present one.

QUERIES AND ANSWERS

HOW MAY POTATOES BE FED TO STOCK?

Answered by W. C. Palmer

Potatoes should be cooked if they are to be fed to hogs. It increases their food-value. It has been found that 400 pounds of potatoes cooked are equal to 100 pounds of grain feed. Some grain should be fed with the potatoes. It does not pay to cook the grain as this decreases its digestibility.

WHEN SHOULD ALFALFA BE DISCED TO THICKEN THE STAND?

Answered by J. H. Shepperd, Dean of
Agricultural Department

Alfalfa land should be disced as early in the spring as the ground is in condition, as alfalfa starts rather promptly and will be injured if it is already under way.

North Dakota Farmer

Entered as second class matter in the postoffice at
Lisbon, North Dakota.

PUBLISHED EVERY MONTH

W. G. CROCKER, JR. PUBLISHER
Lisbon, N. D.

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ASSOCIATE EDITORS

PROF. J. H. SHEPPERD, State Farm Notes.

PROF. W. B. RICHARDS, Livestock.

**PROF. C. B. WALDRON, Fruits, Forestry,
Insect pests.**

GEO. HAUSMANN, Poultry.

Remittances should be made by Draft, Post-
office Order or Express Order.

All Articles and Editorial Matter should be
addressed to E. F. Ladd, Fargo, N. D.

Address all business correspondence to the
Lisbon office.

Vol. 14 APRIL, 1913 No. 10

Plan to build a silo this year.

Every community should form a potato association.

If you wish to save labor at harvest, plant any old time, in any old manner.

North Dakota will prosper in proportion to her livestock industry, conservation or no conservation.

If favorable seeding conditions mean anything, the farmers of North Dakota have an auspicious beginning.

The Babcock test may revolutionize your ideas as to the value of your cattle, but it will save you money in the end.

Elsewhere will be found an article on the value of silage. Read it carefully, then build that silo you have long intended putting up.

In your efforts to improve the livestock, do not forget the most valuable livestock of all—the children. It is not their fault if their pedigree is poor. Is there a consolidated school near, boost it; if there is not, build one.

The amount of corn lost by deep cultivation can scarcely be estimated. Many have the mistaken idea that because deep plowing is recommended deep cultivation should be practiced. Deep cultivation too frequently cuts off the supply of nourishment from the plant. It seems so strange that this destructive method of cultivation should have been practiced so many years, for by means of surface cultivation the weeds are kept down and the dust mulch is formed for the conservation of moisture—the two main objects of cultivating the corn.

The Conference on Marketing and Farm Credits was held at Chicago on April 8, 9 and 10. From all reports this congress was a great success. Every farmer is interested in the marketing of his products at fair prices. One result of the conference is the formation of several associations thruout the country, which will place upon the market vegetables and fruits at wholesale prices, thus dispensing with the middlemen's profits. We shall publish in subsequent issues several of the papers read before this conference, which we believe will interest our readers.

Has it occurred to you that the North Dakota Farmer is "made in North Dakota," by North Dakotans, and for North



Dakotans? It's a fact. Tell us how we may so improve the paper that it will be of more practical value to you.

When Governor Sulzer, of New York, appointed Vincent Astor, the twenty-one-year-old millionaire, B. F. Yoakum, the railroad magnate, and William C. Brown, President of the New York Central Railroad, as New York's quota of the delegation to be appointed by the governors of the several states to visit Europe the coming summer for the purpose of studying the system of rural credits in vogue there, for the benefit of farmers, he demonstrated the farcical character of the movement—as he views it. If the governors of the other interested states take the same view of this matter as does the Governor of New York, the whole business of studying the European system of rural credits is little short of a joke. In fact it looks as tho if farmers want anything they had better go for it and foot their own bills.

Team work is needed by the farmers of the state. Lack of organization places the farmer at a positive disadvantage at every turn, whether buying or selling. The Grange is an organization designed to bring farmers as well as their wives and children into close social relationship for the discussion of domestic and economic questions. The National Grange is anxious to organize the state.

Since the Grange is a strictly farmers' organization this agricultural state should welcome hundreds of Granges within her borders. Farmers owe it to themselves and to the country as well as to their children to co-operate for their mutual protection and improvement. The domestic side of agriculture also is one of the important problems of the day. The Grange takes due cognizance of the home.

Why fool away thousands of dollars on a tax commission? The surest, easiest, sanest and legal way is to obey the constitution and assess all forms of property at its actual value as the constitution of the state requires. Every state official takes an oath to support the constitution—every requirement of the constitution. Why don't they do so? With property assessed at its actual value and with a tax levy of just the amount of money required to support the state government and the state institutions, the credit of the state would not be impaired and the burden of taxation would be no greater than necessary to meet the reasonable demands of the commonwealth. No danger will come from obeying the requirements of the constitution if men of probity are elected to office—elected for the purpose of serving the state rather than for playing politics.

The one great universal laboratory is Nature's. All others are mere imitations. The country boy grows up within Nature's laboratory but the dictum of the educator is that, in order to become a **man** and possess **character**, he must go out of this laboratory and study things foreign to it—study the history and wisdom of men rather than the works and wisdom of God. Instead of agriculture and horticulture, for instance, he should study Latin and algebra.

The girl grows up within the laboratory of domestic science and, as a rule, will be directly or indirectly associated with household affairs all thru life, yet her education must be entirely foreign to it according to the sacred traditional educational curricula. Thank God, however, the traditional in education is being given its minor place instead of a monopoly and things useful and practical are given their share of the student's time.

The report of the North Dakota Demonstration Farms show that the average yields on these farms were more than 50% larger than the average for the state. The work on the demonstration farms was all done by farmers, so it shows what can be done by bringing the right kind of information to the farmer. The report gives the results of the work on the 24 demonstration farms. Different rotations were used so the report is really a report on the rotation of crops. Rotations are given to fit all parts of the state.

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade
ASK YOUR GROCER FOR THEM.

“BUY”

“EAT”

HOME BRAND

Pure Food Products


“ECONOMY” “SATISFACTION”

Griggs, Cooper & Co.

MANUFACTURING
WHOLESALE
GROCERS,

ST. PAUL, MINN.

Main Offices:
CORNER THIRD AND BROADWAY

DR. PRICE'S
JELLY

DESSERT
NUTRITIOUS-WHOLESOME

One package, 10 cents, makes one pint of wholesome Fruit Jelly. All flavors from true fruits.

The Purest of Pure Food Products

are packed under the Brands of

Nokomis
PURE FOODS

Blue Bird
PURE FOODS

Hiawatha
PURE FOODS

Wampum
PURE FOODS

Stone-Ordean-Wells Company
DULUTH, MINN.

BRANCH HOUSES-Minot, Bismarck, N. D. Billings, Bozeman,
Butte, Great Falls, Mont.

MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WELCOME GUEST at every table where the HOUSEWIFE demands the BEST. THE MONARCH LABEL insures QUALITY in Coffee, Catsup, Pickles, Maple Syrup, Canned Goods or any article bearing the MONARCH BRAND of REID MURDOCH & CO CHICAGO

ANOTHER PURE FOOD PRODUCT

CEREKOTA

Self-Rising

Pancake Flour

Is a Scientific Preparation of Healthful Appetizing Ingredients
and the Best Flour Milled in North Dakota

GUARANTEED Pure and Wholesome

Ask Your Grocer for a Trial Package

Bemmels Milling Company

Sole Manufacturers

Lisbon,

North Dakota

Livestock Department



FARM AND STOCK NOTES

N. J. Shepherd,

Growth once interrupted seldom progresses as well afterward.

Similarity of breeding stock produces offspring of much greater value.

Too close confinement tends to quickly exhaust the vitality of stock.

With growing colts plank floors are a fruitful source of bad feet.

Cream should have a uniform consistency as well as being of uniform ripeness when it goes into the churn.

A horse's usefulness is measured by his strength and rapidity of movement rather than by size or weight.

It is all right to learn by experience but do not fail to profit by the experience of others.

In breeding as in building, any defect in the material used in the foundation lessens the value of the whole.

Pedigreed Stock

**PEDIGREED POLAND CHINA
HOGS & SHORT HORN
CATTLE FOR SALE. NOW
BOOKING ORDERS FOR
SPRING PIGS OF THE
BEST KNOWN BREEDING**

WHITE DENT SEED CORN FOR SALE

Booking orders for Barred Plymouth Rock Eggs & Mammoth Bronze Turkeys

Stock for Sale at all times. Pedigree
Furnished. Write your wants to

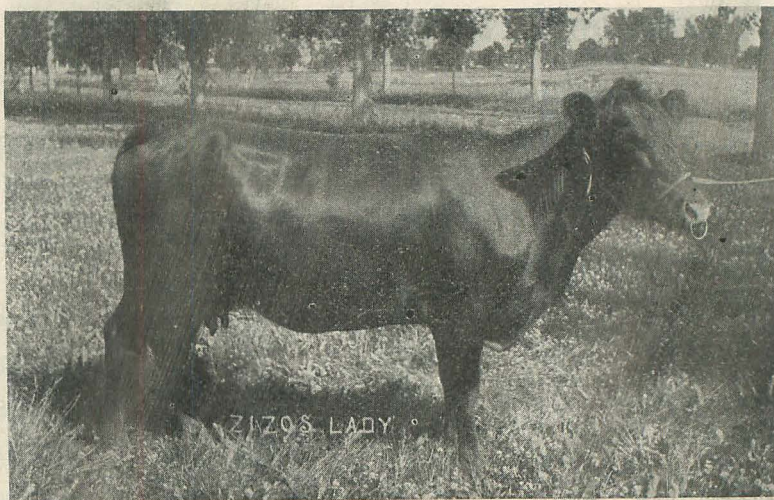
C. H. SCHUTT
R. R. 1, Fairmount, N. Dak.

If a colt has not style enough to naturally hold his head high, high mangers will not make him do it.

When an animal forms a habit, either good or bad, that habit is a part of its life as long as it lives.

No animal of good breeding can withstand for any length of time the disastrous effect of poor care and irregularity in handling.

The cow with the biggest appetite, other things being equal, is the one which will give the most milk and butterfat.



Zizo's Lady.—She is a pure bred Red Polled; a daughter of Linna, age four years. She has more of a dairy type than her dam.

Young growing pigs crave a variety of food and it can usually be given to them in slops better than in any other way.

The farmer who makes the greatest weight in the shortest time, year after year, always feels that hogs are profitable stock to keep.

Luck is what we make it. It is a result, not a controlling influence outside of one's self. Intelligent feeding and care brings two things—luck and a buyer.

Good digestion is the result of feeding enough to sustain the animal, but not enough to keep the stomach in an overloaded condition all the time.

For the best pork we must have the healthiest system, consequently the system of feeding that is most conducive to perfect health makes the best pork.

What a young sow loses in growth, that she should make before farrowing her first litter, it is questionable whether she can ever be made to make it up.

The vices of feather pulling and egg eating are always more common in overcrowded flocks, than in quarters when there is plenty of space for the fowls to exercise.

In some cows there is an inherent trait that makes it possible for them to produce liberally if they are liberally fed, but this trait can be absolutely dwarfed by a miserly allowance.

Fowls require very little investment, not much time, and if the food products for the table are credited to them, they are the most profitable stock of the farm when the cost of production is considered

INDIVIDUAL RECORDS

U. J. Downey, Field Superintendent,
North Dakota

Individual records on the dairy farm are

GIVE IT A TRIAL

German Distemper, remedy for coughs, colds, and worms in horses and stock.

Price 50 cents a bottle at all druggists or will send it prepaid upon receipt of price.

GERMAN DISTEMPER REMEDY CO.
Goshen, Indiana

WHERE CREAM
THEY ALL SHIP
For Highest Prices and DAILY Cash
Payment.
WRITE TODAY FOR OUR SPECIAL
PRICE LIST & TAGS
Headquarters
Veal, Hogs, Poultry
THE **R. E. COBB CO.**
5 E. 3d ST. ST. PAUL

becoming more and more a necessity than a fad as some would class them only a few years ago. The dairyman of today is waking up to the fact that unless he can make a reasonably good profit from each cow something is radically wrong in the management of the dairy herd.

A dairyman must first put his enterprise on a strictly business basis, and that can only be done by keeping records of each individual cow. The working tools necessary are a spring balance milk scale, daily and monthly record sheets, and a Babcock tester. The milk from each cow must be weighed at each milking and the same recorded on the record sheet which is nailed in a convenient place in the barn. Then he may set a certain day of each month to take a sample of the night's and morning's milk from each cow. For instance, samples could be taken the fifteenth of each in the P. M. completing the work on the morning of the sixteenth. It is advisable to allow 2 cubic centimeters for each pound of milk produced from each cow night and morning to get a fair sample. A monthly test is considered a fair sample for the whole month. The number of pounds of milk each cow produces must be added separately at the end of the month to find the total number of pounds of milk produced in that period. This amount is multiplied by the per cent of butterfat to determine the amount of butterfat made. For instance, if a cow gave 875.6 pounds of milk a month, testing 44.2% fat, she will produce 387.7 pounds of butterfat. Furthermore he must keep a record of the feeds fed to each individual cow to get the cost of production and subtract that and other items of cost from the returns to get the net profit.

This will seem to some men an unnecessary amount of work; but unless the dairyman does this he will never know the individual cows that are sending Tom and Dick to college. At the end of a few months a close investigation of the figures will readily show which cows must be disposed of.

The dairyman must know the records of the individuals to know which calves to raise and surely he would not raise the calves from the unprofitable cows if he knew what he was doing. Of course it is taken for granted that a man to do this, will have a pure bred sire at the head of

his herd from some of the well known dairy breeds, such as Holstein Friesians, Guernseys, Jerseys or Brown Swiss. By this method he will raise the production many times above the cost of a pure bred sire.

A farmer who expects to make a success of his work must know which cows are paying a profit on his money invested or in other words, which make a profitable market at home for the crops on the farm. We can class the dairy cow as a manufacturing plant, for a dairy cow of the right type will convert the roughage from the farm into a valuable dairy product at a far greater profit than the crops on the market today.

THE ADVANTAGE OF SILAGE TO DAIRYMEN

G. L. Martin, N. D. A. C.

There are several points which every cow owner would do well to consider if he is to get the best milk yield and reap the greatest profits from his herd. In the first place, a cheap ration must be provided, one that can be raised upon the farm; secondly it must be well adapted to milk production and fed liberally.

As a rule, the greater portion of the feed can be raised at home which always lessens the cost of production. For that reason, corn silage has come to be recognized by nearly all stockmen as the most economical feed the farmer can raise. To show this more clearly we will figure the actual cost of feeding an average herd of ten cows from the time the pastures fail in the fall till grass comes in the spring or a period of some 240 days.

The amount of silage necessary for 10 cows for the given period, allowing an average feed of 40 pounds to each cow per day would require 48 tons. The average yield of green corn per acre in North Dakota is close to 8 tons. At this rate, 6 acres of corn would furnish a sufficient amount. The United States Department of Agriculture estimates the average cost of raising an acre of corn to be \$11.07 and reliable authorities figure the cost of put-



IMPROVE YOUR STOCK

It Pays to Clip

Horses, Mules and Cows. They are healthier and render better service. When the heavy coat that holds the wet sweat and dirt is removed, they are more easily kept clean, look better, get more good from their feed and are better in every way. The best and most generally used clipper is

The Stewart Ball Bearing Clipping Machine

It turns easier, clips faster and closer and stays sharp longer than any other. Gears are all file hard and cut from solid steel bar. PRICE **\$7.50**

They are enclosed, protected and run in oil; little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head, highest grade.

Get one from your dealer or send \$2.00 and we will ship C. O. D. for balance. Money and transportation charges back if not satisfied.

CHICAGO FLEXIBLE SHAFT CO.
175 OHIO STREET CHICAGO, ILL.

Write for complete new catalog showing world's largest and most modern line of horse clipping and sheep shearing machines.



Wool Growers, Beware of the Tariff "Bugaboo"

Don't let this tariff talk scare you. Even though the tariff is being revised, you will get a good price for your clip, provided you sell at the right time.

To take care of our customers during this season of surprisingly quick-changing prices, we are going to send FREE Special Market Reports frequently, from now till September. These Special Reports will be authentic and reliable, being based on our 47 years experience, during which time we have become one of the biggest wool merchants in the world.

By watching our Reports closely, our customers can pick the best time to sell. Last year our customers made an average of 2c to 3c per pound more for their wool by following our advice. This year they will profit even more, as a result of our Special Reports.

Now, if you have as much as 200 pounds of wool, you can have your name put on our mailing list. You'll get our Special Reports, free, all through the season. You won't make the mistake of selling at

the wrong time, or of selling to some buyer who, on account of the tariff agitation, is afraid to pay you the market price, or will scare you into taking less than the market value.

Remember, we charge nothing for this service. We place you under no obligation whatever. We must print about 50,000 Reports anyhow for our old customers. It's no particular trouble to print a few hundred extra for other wool growers.

Merely send us your name on a postal. Then, every time we get out a Special Market Report you will be remembered. You certainly can't lose anything by watching our Reports, and they may be the means of saving you a lot of money—good, hard coin that rightfully belongs to you.

This is no season to be selling wool to any old buyer at any old time. GET POSTED. If you send your name on a postal now, you'll get some interesting Wool News by return mail. (12)

S. SILBERMAN & SONS, Desk 83, 1117 W. 35th Street, CHICAGO, ILL.

SHROPSHIRE RAMS

I have forty-five thoroughbred Shropshire rams for sale. Coming two and three years old. Prices right. Call and see what I have to offer or write.

FORRESTER H. SMITH

Amenia - - North Dakota

CLASSIFIED ADS.

One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. **TRY IT HERE.**

LIVE STOCK

FOR SALE GALLOWAY CATTLE

J. W. & F. T. PETERSON, Litchfield, Minn.

POLAND CHINA PIGS. also Shropshire sheep Seed grain. **GEO. N. SMITH,** Amenla, N. D.

FAMOUS O. S. C. SWINE. Am now booking orders for fine pigs of April farrow. Price: \$18 each; \$35 a pair. All Stock recorded free. Shipping point: Mankato.

ROBT. A. HAEDT, Eagle Lake, Minn.

ASH GROVE FARM-Knudtson & Son, Props. Breeders of Pure Bred Percheron Horses and Short Horn Cattle, Both Sexes. **Route 1 Fullerton, N. D.**

J. S. BIXBY

RED POLL CATTLE. If you want dual-purpose cattle, I have the best. Rhode Island Reds, also in stock. **LISBON NORTH DAKOTA**

FOR SALE. Work Horses, Drivers, Stallions and Double-standard Polled Durham Bulls. **LEAL STOCK FARM Leal, N. D.**

Bellevue Herd Milking Shorthorns

Best adapted cattle for North Dakota conditions. Herd headed by Duke of Riverpark (3441281) got by Chief of Glenside (285899). Foundation stock purchased in the Minnesota Milking Shorthorn circuit. One of our cows by Beau of Glenside (No. 285898).

DUBOURT BROTHERS
Pembina County Leroy, N. D.

FOR SALE

Percheron, Belgian and Shire horses

J. W. & F. T. PETERSON, Litchfield, Minn.



Purebred Registered
HOLSTEIN CATTLE
The Greatest Dairy Breed

Send for FREE Illustrated Book.
Holstein-Friesian Asso., Box 135 Brattleboro, Vt.

ENVILA STOCK FARM

Envilla Stock Farm, Cogswell, N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat Dogs and other breeds. Angora Cats. All varieties of chickens: turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Eggs for Hatching, Parcel Post or Express. Guaranteed safe arrival. Fertile from Pure Bred stock. Packed in light baskets.

MISCELLANEOUS

DETECTIVES WANTED. Young men to operate in own locality, secret service work, experience unnecessary, inclose stamp for particulars. **Universal Detective Agency, 504 Colcord Bld'g. Oklahoma City, Okla.**

AGENTS WANTED. Farmer's Directory, Account Book. Exclusive home territory. Easy seller. Big inducements. Particulars Free. Write **Naylor 938 Ft. Wayne, Ind.**

ALFALFA SEED. This seed has stood the test of many winters in this climate. There is none better. Write for price and sample. **J. L. MAXSON**

Buffalo Gap South Dakota

FOR SALE. Creamery in first class condition at a bargain at Crystal, N. D. For further information write to **J. S. GESTSON, Sec. CRYSTAL, N. D.**

Young man, would you accept and wear a fine tailor-made suit just for showing it to your friends? Or a Slip-on Raincoat Free? Could you use \$5 a day for a little spare time? Perhaps we can offer you a steady job? Write at once and get beautiful samples, styles and this wonderful offer. **Banner Tailoring Company, Dept. 196, Chicago**

ting corn into the silo to average about 75 cents per ton. Then we may arrive at the actual cost of the feed as follows:

Cost of raising 6 acres of corn....\$ 66.42
Cost of harvesting 6 acres of corn 36.00

Total.....\$102.42

Cost of silage for 10 cows 240 days \$102.42
Cost of silage for 1 cow 240 days 10.24
Cost of silage for 1 cow one day .044

According to the best authorities on animal feeding the leaves and the stalks contain about 37% of the food value in the corn plant which is practically a total loss if the ears only are fed. A 100 pounds of silage contains 13% or 13 pounds of food material, at which rate 48 tons would contain close to 11,480 pounds. If this amount of food material were furnished in the form of:

Hay	Cost
Prairie, would require 11 T at \$12,	\$132
Timothy, would require 12 T at \$18,	\$216
Oats, would require 11 T at \$15,	\$165

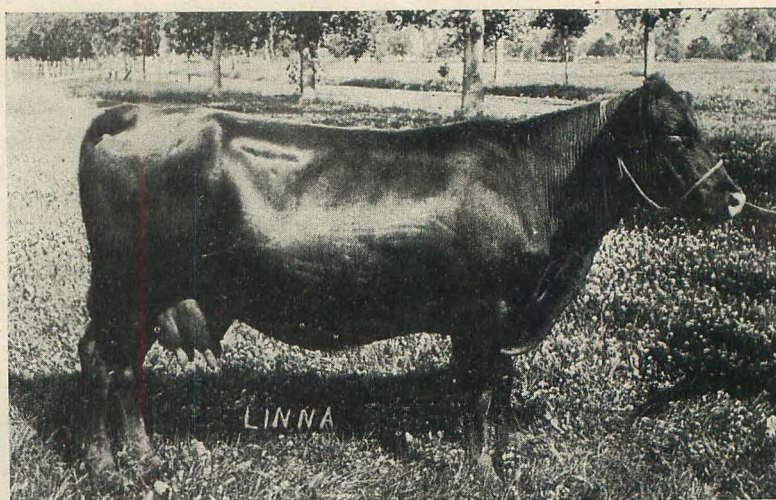
1 lb. Linseed Meal .7 .02

Total..... 12.8 \$0.16

The above rations are figured for the average dairy cow and each contains practically the same amount of food material. It is noted that there is an actual saving of 6 cents per cow per day. With a herd of 10 cows, this represents a saving of 60 cents per day or for 8 months, the average time a dairy cow would be fed would mean a saving of \$144 in cost of grain or \$14.40 per cow.

DO DAIRY COWS PAY?

This question has been pretty well answered for the people near Dickey in the success of W. M. Spitzer who sold out there a few days ago. Mr. Spitzer has been farming about ten years. He filed on a homestead about three miles north of town and located in the hills of the Jim River valley with only fifty acres of tillable land on the quarter.



Linna. A pure bred Red Polled, six years of age, and bought with Sunstroke in October, 1904. She would have produced greater returns if she had not freshened so young. Her records indicate that she is improving each year.

The economy of feeding ensilage is even more striking when we compare the cost of a ration made up largely of grain and one where a part of the oats, corn and bran are replaced by corn ensilage.

Grain Ration

	Pounds Food Material Used	Cost Per Day
10 lbs. Prairie Hay	4.7	\$.06
2 lbs. Oats Hay	1.2	.03
6 lbs. Bran	3.3	.06
4 lbs Corn	3.2	.05
1 lb. Linseed Meal	.7	.02
Total.....	13.1	\$0.22

Silage Ration

40 lbs. Silage...	5.2	\$0.04
10 lbs. Prairie Hay	4.7	.06
4 lbs. Bran...	2.2	.04

He went into the stock and dairy business and at the time of his sale this spring he had this farm clear and had bought and paid for a farm in Wisconsin and had \$4000 in cash when he left here. Practically every dollar of this he made from his quarter of bluff land with only fifty acres under cultivation. This

Oxford Down RAMS

A Few Choice Ones
FOR SALE

Willobank Farm

EASTGATE BROS.

LARIMORE, N. D.

should satisfy the most skeptical on the proposition of the cattle and dairy business for North Dakota and especially for the vicinity of Dickey.

N. D. STALLION REPORT

The Third Annual Report of the North Dakota Stallion Registration Board is just from the press. According to the report there are 2917 stallions licensed in the state. Of these 1273 or 43½ per cent are pure bred. This is a gain of 266 pure bred stallions since 1910. The Percherons are in the lead with 790. Belgians next 118, American Trotters 103, Clydesdale 101, French Draft 72, Shire 62. The report has an article on side bones by Dr. L. Van Es—notes on how to select and purchase a stallion—statistics of stallions registered and a list of the stallion owners in the state with their addresses. The report is illustrated. Requests sent to the Stallion Registration Board, Fargo, will bring a copy free.

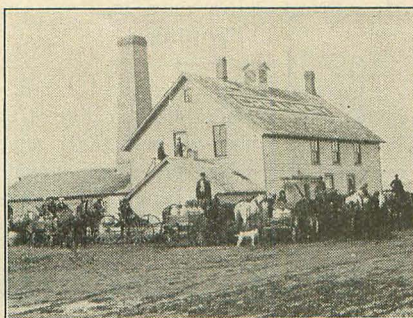
DR. E. J. WALSH OF MINOT MET WITH LIVESTOCK SANITARY BOARD

Dr. J. Walsh of Minot has returned from Bismarck, where he attended a meeting of the Livestock Sanitary Board, which had many matters of importance before it. Dr. Walsh is president of the board, the other members being W. L. Richards, Dickinson, secretary; Andrew Veitch, of Grand Forks; Dr. Robinson, of Garrison; T. B. Dawson, of La Moure, and Dr. W. F. Crewe, of Devils Lake.

The board is much encouraged over the prospects for the coming year and state that the condition of livestock in this state is excellent. There is one feature of the livestock department in this state which is pleasing and that is the fact that the state of North Dakota has the best livestock laws in the United States. In fact, they are being copied all over the United States and the law makers of this state, and especially those who have the framing of this class of laws in North Dakota, are to be congratulated upon the state's distinction in this matter.

Dr. Walsh is now in Montana where he is testing fifty head of range cattle in the vicinity of Plentywood.

CREAMERY NOTES



The White Earth Creamery Company a farmers' co-operative creamery was built in the fall of 1910 and was in operation the spring of 1911.

The first season the creamery had a very big business altho it was opened rather late in the season.

The second year the business increased 25% and at present the prospects are very good. The farmers are very much interested in dairying and are going after it very strong. The conditions are the very best for dairying, as we have the blue grass country around here and everything that goes in making up a good dairy country.

Mr. C. T. Madsen, formerly of Penn, N. D., is the new manager for the Maddock Creamery and he is doing fine work towards building up a large business.

Receipts are daily increasing. First week in April 2000 pounds of butter made.

The Maddock farmers are very much interested in dairying and are paying fancy prices for good cows.

Butter made at the Maddock Creamery is selling at a good price in New York.

We are anxious to do more business than ever before and are fully equipped to increase our trade.

WANTED Subscription Agents

Liberal Cash Commission
North Dakota Farmer, Lisbon

ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN. Comparison of Receipts and Shipments of Livestock for March, 1913

Railroads	Receipts					
	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P.....	376	266	849	144	20	31
C. G. W.....	887	418	4038	1097	227	125
C. M. & St. P.....	4498	1131	16587	900	20	438
M. & St. L.....	2228	506	14232	485	4	306
C., St. P., M. & O..	3546	1000	18079	613	170	424
C. B. & Q.....	197	87	1119	91	48	29
M. St. P. & S. S. M .	5039	2592	9077	732	4	344
Gt. Nor.....	9753	3983	25646	11041	31	822
Nor. Pac.....	5794	1535	10326	26512	38	474
St. P. B. & T.....						
Driven In.....	792	112	495	331	17	
Total.....	33110	11630	100448	41946	579	2993
Increase over 1912.	8657	1818	13399	6906	192	656
Decrease.....						
Jan. 1 to date.....	80308	26758	305326	108684	1375	8147
Increase over 1912.	16914	3964		6916		809
Decrease.....			18384		572	
Average Wts.....	825	201	233	91		
Cattle	Shipments					
	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P.....	1472	373				48
C. G. W.....	3788	225		650		126
C. M. & St. P.....	6446	576	12211	15008	43	405
M. & St. L.....	1578	128			2	14
C., St. P., M. & O..	4584	1696	447	12129	38	213
C. B. & Q.....	1430	308	12066	3381		180
M. St. P. & S. S. M .	978	74	72	808	203	12
Gt. Nor.....	973	78		379	149	43
Nor. Pac.....	356	48		243	9	17
St. P. B. & T.....						
Driven Out.....	437	233	7	24		
Total.....	22051	3639	24803	32622	444	11:9
Increase over 1912.	6002	2159	3841	8757		108
Decrease.....					334	
Decrease.....					334	
Jan. 1 to date.....	53001	6087	73987	73934	1070	27:6
Increase over 1912.	19015	2484		9549		194
Decrease.....			6959		853	

One Man can run it.

BIG MONEY in the OFF SEASON

Earn \$2000.00 a year extra money, besides your regular farm work, with the

Improved Powers Boring and Drilling Machine. Bores a well 100 ft. deep in 10 hours. One man can run it; a team operates it and easily moves it over any road. Bores everything except hard rock, and it drills that. No tower or staking; rotates its own drill. Easy terms; write for catalog.

Lisle Mfg. Co.
Box 540 Clarinda, Iowa.

THE RANSOM COUNTY CORN BREEDERS' ASSOCIATION

By Harvey Sutton, Secretary

On the 12th of March, at a meeting held in the basement of the Armory in the city of Lisbon, under the auspices of the Better Farming Association, the Ransom County Corn Breeders' Association was organized.

Heretofore, comparatively little corn has been grown in North Dakota for various reasons, chief among which, probably, is the scarcity of northern grown or home grown seed corn. It is the object of this association to grow enough corn to supply the ever-increasing demand for home grown seed. No doubt, within a short course of time the association will establish various departments and branch out, and grow and place upon the market cereals, clover, grass, and alfalfa seed as well as corn. For the present, however, the association will confine its efforts to the improvement of corn. Each member, when joining the association, pledges himself to grow a breeding plat and tend the same according to the rules and teachings laid down by this association. In order that uniformity may be obtained, and work carried on in a systematic way, the association elected O. O. Ullhorn, the Ransom County Field Agent of the Better Farming Association, Superintendent of breeding plats. The association at the present time does not intend to dictate to its members the variety of corn that the several members shall breed. However, we intend to confine our efforts to the improvement of Dent varieties, and especially those that have proven themselves worthy of further improvement. Northwestern Dent will be bred by four members; Minnesota No. 13 by four; Minnesota No. 23 by four; and Early Dakota by three members. The other members have not yet announced which variety they intend to grow and breed. A few will also breed some of the early Flint varieties in order to be able to supply the orders which are being constantly received from the northern part of the state.

At the present time the association consists of sixteen members, with two applicants upon the waiting list.

The officers are: President, C. O. Larson; First Vice-President, W. J. Brush; Second Vice President, W. E. Chisman; Secretary, Harvey Sutton; Treasurer, J. S. Bixby.

In closing, I wish to state that it is not to be understood that this association will confine its efforts along the line of corn, to the breeding and growing of corn for seed only, but will encourage the growing of more corn to supply the general market. Already, the association has received an inquiry as to whether we can supply a certain locality on the Pacific coast with feed

corn. This means a steady market and the association will do all in its power to develop a market for all the corn that will be grown in the state.

BOURBON RED TURKEYS

Mrs. Frank Kinnaman in Profitable Farming

I had heard so much about the hardy, robust and all round good quality of the Bourbon Red Turkeys, thought I would try them. Last November I purchased a tom for \$4 and three hens at \$3 a piece,

which I thought was a big price, until I found they were so little trouble to look after.

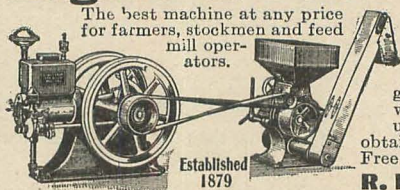
I think their plumage is beautiful, being a deep bay color with their tail and wings tipped with white, which makes them so easy to find when on their nests. They do not rove around like the Bronze and never fail to be at home to roost, but are good foragers and are next to the Bronze in size. They do not try to hide their nests, but lay in the barn and henhouse, at least mine did. They have such a tame nature that they can be moved if not in a suitable place

W. F. JACOBS Livestock Auctioneer

Thoroughly Posted on Pedigress

Terms Reasonable LISBON, N. D. Write for dates

Engine & Feed Grinding Outfit



THE HOWELL ROLLER FEED MILLS have been wonderfully successful everywhere. They wear a life time, grind twice as fast with the same power as the best burr or stone mill made. Good money in custom grinding. Grinds Graham and Rye Flour as well as feed. Engine is of latest and most up-to-date design. Runs at proper speed to obtain best grinding results. Simple and Durable. Free Catalog D3 tells everything.

R. R. HOWELL & CO., Minneapolis, Minn.

ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN.

Comparison of the Origin and Disposition of Livestock for March 1913

Origin of Livestock Received

States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota.....	22206	9200	75868	6736	87	2048
Wisconsin.....	2431	1174	5718	267	3	182
Iowa.....	6	.....	128	.....	263	18
Far South.....	.....	.....	.....	.....	118	5
So. Dakota.....	1186	163	4725	618	40	119
No. Dakota.....	6823	1089	13805	1065	20	456
Montana.....	396	4	204	33260	.....	159
Far West.....	4	.....	.....	.....	48	4
Manitoba & N. W. T.....	.....	.....	.....	.....	.....	.....
Far East.....	.....	.....	.....	.....	.....	.....
Returned.....	58	.....	.....	.....	.....	2
Totals.....	33110	11630	100448	41946	579	2993

Disposition of Livestock

So. St. Paul P'k'rs.	10126	6635	75614	12455	.....	.....
City & State Butch.	484	120	390	424	.....	26
Outside Packers...	.....	717	24187	249	.....	221
Minnesotq.....	3547	620	7	1166	62	124
Wisconsin.....	2293	129	10	133	83	89
Iowa.....	6457	803	.....	118	4	208
Nebraska.....	430	450	.....	.....	.....	18
Kansas & Missouri	752	107	.....	.....	.....	22
So. Dakota.....	3102	393	.....	.....	.....	93
No. Dakota.....	636	.....	.....	.....	103	23
Montana & West..	199	5	.....	.....	23	9
Far South.....	.....	.....	.....	.....	.....	.....
Manitoba & N. W. T.....	.....	.....	.....	.....	.....	0
Mich. & E. Can..	233	.....	.....	.....	.....	16
Chicago.....	1737	70	90	30532	110	204
Ills. (ex Chicago)...	181	224	.....	.....	.....	83
Eastern Points....	.....	.....	.....	.....	42	2
Returned.....	.....	.....	.....	.....	.....	.....
Totals.....	22051	3639	24803	3262	444	1139

when wanting to set, the same as a chicken hen.

The first time my hens layed, two of them produced nineteen eggs apiece, and the other one twenty-eight eggs, making fifty-eight eggs for one laying. I do not know the exact number of eggs they layed together. One hen layed four times, the last time ten eggs, hatched all of them, and raised five turkeys. Last year I had a Bronze hen that layed twice, for

the first laying thirteen eggs and the second seven, then I could not break her from wanting to sit.

The Bourbon Reds are as free from disease as it is possible for an turkey to be; I didn't lose one from any kind of disease, neither had a sick one in the flock. I would advise those who are discouraged with other breeds to give this one a trial. I am sure they will never regret it.



Poultry Department



POULTRY SUGGESTIONS FOR APRIL

Mrs. G. W. Randlett
N. D. A. C.

If you intend to use hens for hatching, set them in a dry place where the ventilation is good.

If you do not intend to use hens for hatching, break them up at once and get them to laying again.

A good way to break up a broody hen is to put her in a light airy coop with a wire or slat bottom that you can hang up. This permits a free circulation of air and as it blows up thru the fluff it reduces the fever which is in their blood at this time.

This is the month to get out your winter layers.

If you have windows in the hen-house, keep them clean as the hens need all the sunlight they can get these days.

Hens suffer from a damp hen-house, so it is well to keep the floor covered with litter.

Be sure to keep plenty of fresh water before the hens. A great amount of water is used to form the egg.

Put your thinking cap on and don't let other work crowd out the chicks.

Let the poultry have a share of the sour milk.

If you have not had the nerve to use the open front house during the winter, you had better begin now by removing the windows on the south and use muslin.

Eggs from hens that have made a fair showing in laying this winter will be more fertile than those that did heavy laying.

Keep a flock of hens, a good cow or two, prepare for a good garden this year, and you won't have to complain of the high cost of living.

There never will be too many good poultrymen, but we can strive to be among the best.

PREVENTION IS BETTER THAN CURE

Michael K. Boyer, Hammonton, N. J.

As a rule, poultry are of a hardy nature,

and, consequently, are not delicate until man makes them so.

If properly cared for they will remain strong and vigorous, proof of this being shown in the fact that on all the large farms in care of veterans, sickness is seldom found among the stock.

The nature of the fowls must be studied, and every comfort given. Comfortable houses must be provided. A house should be so constructed that it will be practically an open shed during the summer, and a warm and yet well-ventilated house in winter—free from drafts, and safe from the cold winds and stormy weather.

The nearer poultry are kept in a natural state, the more hardy will they be. It was this fact that led up to the invention of the scratching-shed house plan.

There is danger in houses built so tight that scarcely a breath of air can enter. Again, such places are often overcrowded, and the fowls sweat while on the roost at night, a condition that quickly brings on colds. It is safe to say that fully two-thirds of the cases of roup are due to overcrowding in close, badly-ventilated houses.

The effect of the different articles of food, as well as the manner of feeding, must be studied. To feed a diet, during the summer, of corn or other heat-pro-

ducing foods, is apt to bring on a diseased condition about as quickly as poor housing. Entirely too much corn, and not enough variety—a proper blending of nitrogenous and carbonaceous material—is fed. An exclusive diet of any one grain is harmful, producing diarrhoea, and symptoms closely resembling "cholera." The bowels are the best indications of condition. When the droppings are of a brownish color, capped with white, they denote good health, and it is then certain that the food is agreeable.

The present system of dry feeding is becoming more popular every year. This does away entirely with wet or moist mash, which are the cause of so many cases of overfat and bowel troubles.

Fowls must not be overfed. They should have only what they will eat up clean. The dry-feeding method, however, allows food to be constantly before the stock in hoppers. Champions of this method claim that fowls will not overfeed when dry material is constantly before them, for they eat of it only by degrees, taking with it draughts of water to wash down the food. This we believe, should be allowed only with dry mash, and not with whole or cracked grains. In the latter case the amount should be limited to an average of a handful for each fowl in the pen—and scattered among litter so as to induce exercising.

Cleanliness is an important factor in maintaining health. It should be made a rule to daily gather up the droppings, and cover the dropping boards under the roosts with sifted coal ashes or dirt. Plenty of kerosene should be used on the roosts and in the nest boxes, and every spring and fall the interior of the houses should be whitewashed, and several times a year the premises fumigated by burning sulphur. The drinking fountains, too, must be kept clean, and the water never allowed to become stagnant.

Cleanliness will not only keep out disease germs, but will give a fatal blow to the

ENTERPRISE POULTRY YARDS

BARRED ROCKS OF QUALITY

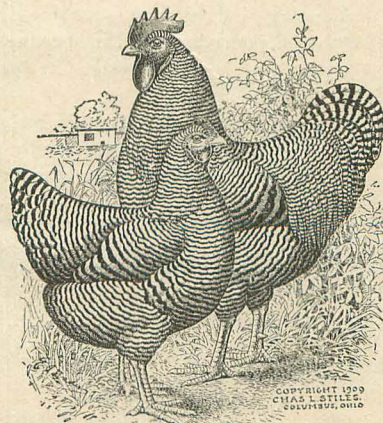
I am now offering for sale 27 cockerels from

\$2.00 to \$15.00

These birds are top notchers, bred from the best stock, and grandsired by "Masterpiece," the \$500 bird. 25 percent discount to members of the Poultry Association.

Mating catalog for 1913 now out. A postal will get it.

EGGS FOR HATCHING



E. W. WILSON

LAMOUE, N. DAK.

prosperity of the lice. Lice weaken poultry, and in this state the latter become easy prey to disease.

All droopy, ailing fowls should at once be isolated. For this purpose it is well to have cages built in a separate building. In many cases, a few days' quiet will be more effective than medicine. A liver pill given when the fowl is placed alone, will hasten a cure. Should the condition remain unchanged, the dose can be repeated. Green food, such as lawn clippings, lettuce, or other tender greens, will greatly help along the cause.

Slight colds can be effectively treated by giving a one-grain quinine pill each night for three nights in succession.

Rare beef, chopped fine, will do wonders in toning up a debilitated fowl.

It does not pay to doctor a fowl that is hopelessly ill, or suffering from a contagious disease. The latter are never permanently cured, and will transmit their weakness to the offspring.

Prevention means a minding of all the details, it means regularity, it means system, it means comfort; in short, it means foresight.

THE EVOLUTION OF THE POULTRYMAN

ARTICLE II.

"Nature's Way"

Robert A. Harrison, David City, Nebr.

What proved true in my care of 48 chicks and chickens the first year in my backyard at David City, Nebraska, was verified by my experience the second year. I hatched and started to maturity two hundred and fifty chicks with a loss of exactly five. The plot was growing constantly more interesting, and the fundamentals became more strikingly apparent.

The 48-hour-old chick fed on hard-boiled egg, dry bread, sand, water, and milk, started without handicap. At four days began the gradual change of feed to ground grain, including corn, alfalfa meal and growing grass. The warm water brooder with wide, hovering porch protected the babies day and night in all kinds of weather.

At two weeks the crops of the promising chicks were strong enough to handle—without danger of the tresetting ills—a constant ration of all the ground grains and food materials which could be secured. On grassy runs, with loosened earth for

scratching, the growing birds never suffered the pangs of hunger, and consequently the injuries of inflamed and overcrowded crops. Thus the next six weeks were passed without the loss of a single life in the several families of growing poultry.

At eight weeks began the selection of the poorly marked cockerel for table use. Likewise the pullets were separated and placed into pens to receive from hence a special treatment, depending on what was to be made of them. The problems of clean coops, feeding space, ventilation and crowding were all multiplied.

At four months the pullets were growing vigorously and showed signs of becoming "laying hens." While the making of laying hens is a process to be begun in the parent birds, food is at this stage an important item. Less heavy grain, and all forms of nitrogenous foods are necessary with milk. A bit of freshly spaded earth with the occasional bug or worm is the pullet's delight. She becomes an inveterate worker, and will if necessary dig from under the loose soil all the bits of grain, sprouted oats and wheat she eats. Growing rape and green sweet corn work wonders.

At five months the embryo of eggs will begin developing in the pullet of the ordinary breed. Six months show lengthening comb and wattles. Seven months brings eggs from all the best layers. These months of final preparation have called for grit, shell, charcoal ash, ground bone, and finally a small portion of meat scraps.

What a guide nature is. The signal of distress and wrong is always thrown out for the detecting eye of the practical poultryman. He studies these signs more than the printed page; and works to remove causes more than he applies cures.

A good test of the nature guided chicken raiser is found in the treatment he would accord the "broody" hen. The prevailing attitude is to punish her for misdemeanor—in not continuing to lay eggs; while the "Nature method" is to find the cause of her desire to "set" (which may be overfeeding of fatty or heavy foods, or just the nature of the fowl.) In any case the egg-producing foods and work-making devices of the chicken yard are the speediest and only way by means of which the "setter" will "start laying."

The problem of an adapted ration for laying hens has been worked out by many chicken raisers. Grading, and condition-



EGGS FOR HATCHING

From Land and Water Fowls. Greatest Egg layers. Biggest money-making strains. Prices Low. Don't Buy An Egg till you see our Circular, mailed for 2 cents. Write today. Farmer's Poultry Co. Mankato, Minn.



55 BREEDS

Pure-Bred Chickens, Ducks, Geese, Turkeys, also Incubators, Supplies, and Collie Dogs. Send 4c for large Poultry book Incubator Catalog and Price List. H.H. HINIKER, Box 30 Mankato, Minn.

HATCHING EGGS of the Leading Strains and of the Prize Winning kind. Mamouth Bronze Turkeys, 12 Eggs \$1.50 Barred Plymouth Rock 15 Eggs, \$1.50; 50, 3.00; 100, \$5.00. SEED CORN FOR SALE. Write all orders to C. H. SCHUTT R. R. 1 Fairmount, N. D.

FOR SALE-- Full-blooded Indian Runner Ducks Eggs in Season. Mrs. F. D. Dayl, Hope, N. D.

EGGS, from Pure Bred Barred Plymouth Rocks. Prize winners and good layers. \$1.50 for 15; \$5.00 for 100. MRS. WM. MEAD MAPLETON, MINN

ELEVEN YEARS A BREEDER. Pure-bred poultry: White Wyandottes, Toulouse Geese, Bourbon Red Turkeys and Pearl Guineas. Stock for sale. Write me your wants. E. A. TOW, R. R. 3 LISBON, N. D.

EGGS FROM BUFF ORPINGTONS AND S. C. RHODE ISLAND REDS at special low prices. Bred to lay. F. M. PEZALLA, Cayuga, N. D.

BUFF WYANDOTTE EGGS for hatching, Fowls for sale. Also twelve breeds of Fancy Pigeons. M. B. NOBLE, Hillsboro, N. Dak.

BARRED ROCKS Bred to Lay and Win Won all first at Fargo, N. D. State Show, 1906, 1907, 1908, 1909 and 1911. Stock at reasonable prices. PETERSON BROS. Harwood, N. D.

HAUSMANN POULTRY FARM Breeders of W. Wyandottes and S. C. W. Leghorns Hillsboro, North Dakota

EGGS FOR HATCHING. White Plymouth Rocks (Fishels Strain) \$5 per 15. I have the Best in the Northwest. No exceptions. Indian Runner Ducks from Choice High Bred Stock, \$2.50 per 11. Canadian Wild Geese, \$1 per egg. C. H. MCGEE Oriska, N. Dak.

WHITE WYANDOTTES. If you want eggs from an early maturing, heavy laying, prize winning strain of White Wyandottes write me. I am developing a special laying strain by use of the trap nest. Prices reasonable. Write M. C. JAMES, Valley City, N. D.

MAKE YOUR HENS LAY MORE EGGS I have a method that will make your hens lay every day; it never fails. Write for it. 2c stamp. MRS. B. F. WILCOXON, North Platte, Neb., Dept. 8

FOR SALE. M. B. Turkey Toms, raised from our Diploma Stock, \$5.00 and up; also Eggs from 26 varieties poultry. Catalog free. L. GULDEN, Osakis, Minn.

Silver-Laced Wyandottes, Thoroughbred, Wide Open Laced, Big Utility, Winter Laying Birds. Bred for Business. Eggs for Hatching: 15, \$1.50; 30, \$2.75; 50, \$4.00; 100, \$7.00. Satisfaction Guaranteed. Anthony Elm - - - Lansford, N. Dak.

EGGS FOR HATCHING via Parcel Post or Express from all varieties: Rocks, Brahmas, Wyandottes, Leghorns, Orpingtons, Reds, Cochins, Bantams, Guineas, Geese, Turkeys, Ducks, Pigeons. Also Angus Cattle, Ponies, Duroc Jersey Hogs, Dogs, Cats, Rabbits, Pets. Wanted: Young Foxes.

ENVILLA STOCK FARM Cogswell, North Dakota

WE DUPLICATE ALL IN- FERTILE EGGS

White and Columbia Wyandottes, Single Comb White Leghorns, and Light Brahmas. We use trap nests. In business 30 years. Brahma eggs, \$3 for 15; \$5 for 30. The other varieties, \$2 for 15; \$5 for 50; \$10 for 100. Address,

Michael K. Boyer, Box 17 - Hammonton, New Jersey

KARL THOMTE BREEDER OF ROSE COMB RHODE ISLAND REDS LISBON, NORTH DAKOTA

I won 1st Hen, 1st Pen, 2nd Cock, 3rd and 4th Pullet at State Poultry Show, Fargo, N. D. January 10-17, 1913.

Will send stock on approval. Let me hear from you early. February 1st I got 46 eggs from 75 pullets after three days of 20-below-0 weather. No artificial heat used.

Hens and pullets, each.....\$1.00 to \$2.50
Cocks and cockerels, each.....\$1.50 to \$5.00
Pens of six birds.....\$10.00 up
Trios.....\$5.00 up

EGGS FOR HATCHING

1st Pen.....\$2.00 for 15 or \$6.00 for 50
2nd Pen.....\$1.50 for 15 or \$4.50 for 50
3rd Pen \$1.00 for 15, or \$3.00 for 50; \$5.00 for 100

ing fowls have likewise grown to established arts. But perfected devices and fixtures, adjustable and economical houses which are adaptable to the varying seasons and changing tendencies of the fowl are not prevalent.

It is my purpose in the third article of this series to point out some of the special features of the modernized house which marks an evolution of the poultryman along Nature's way.

POULTRY POINTERS

A duck is not fully matured until it is about two and a half years old.

Young geese are ready for market when the tips of their wings reach the tail, which is when they are about 10 weeks of age.

It is claimed that it is much easier to dress a gosling in warm than in cold weather, as the feathers do not set so tight, and in picking them the flesh is not so apt to be torn.

The average weight of a hen's eggs run from 15 to 24 ounces per dozen. A weight of $22\frac{1}{2}$ ounces may be taken as fair average for good sized eggs, altho a weight of four ounces is not unknown for single specimens.

The way to "plump" a dressed fowl is to dip it for 10 seconds in water nearly or quite boiling hot, and then immediately in cold water. Hang in a cold place until the animal heat is entirely out. Plumping gives the fowl a much more attractive appearance.

When scalding poultry for market, it is best to first dry-pick the legs so that they will not necessarily be placed in the water and change color. Neither the heads nor the feet should touch the water. The water ought to be as near boiling point as possible, without boiling.

Fowls occasionally suffer from sour crop; that is, when picked up they vomit a quantity of fluid, and the crop feels soft. For this we know of no better remedy than two teaspoonfuls of sugar and baking soda, in a teacup of warm water. Give two teaspoonfuls of this once a day, and at the same time supply plenty of grit.

When fowls are made bloody by fighting, the sores or cuts should be washed with whiskey, and afterwards anointed with a little vaseline. It is also well to beat up a raw egg and add 10 to 12 drops of whiskey for each bird. There is danger of canker setting in from neglected cuts made by fighting.

"The small pigeon-sized eggs are generally the last of a litter." That at one time was a well-established theory, but the introduction of the trap nest has exploded it. On the farm of the writer where trap nests are used, these small eggs, were in a number of tests, immediately followed by normal sized eggs, which went to prove that the pigeon-sized eggs come from some other cause.

Air blisters often show themselves in young chicks. The skin puffs out and seems like a bladder of wind. It comes on the abdomen, sides, and under the wings and neck. Prick the blisters with a needle, to let out the air. Add carbonate of iron alternated with granulated charcoal, daily in the food. The diet should be oatmeal principally, with plenty of sharp grit within reach.

Are you boosting the North Dakota Farmer? One year, 50 cents: three years, \$1.00.

The Pekin duck is of Asiatic origin, and was imported to this country from China, 30 or more years ago. Hudgens says a traveler who saw them about the streets of Pekin, mistook them for small white geese at first, but upon finding that they were ducks, was so greatly impressed with their snow-white plumage and noble carriage that he secured some of their eggs. They were brought to Hong Kong and hatched, and in due time the birds were shipped in a vessel bound for New York. A number of the ducks died during the long sea voyage, but from the rest has sprung this popular breed that is now met with in nearly every state of the Union.

Hatching Eggs and Breeding Stock

Heavy-Laying, Prize-Winning Birds

Buff Orpingtons—White, Buff and Barred Rocks—White, Buff, Silver, Golden, Columbian and Hadaway strain of Partridge Wyandottes

O. A. Barton, Valley City, N.D.

WHITE ORPINGTON and

INDIAN RUNNER DUCK EGGS

\$6 per hundred. Turkey and Geese eggs, \$1.75 per setting. We breed all leading varieties of standard poultry. Plymouth Rocks are our leaders. Stock of highest quality at let-live prices.

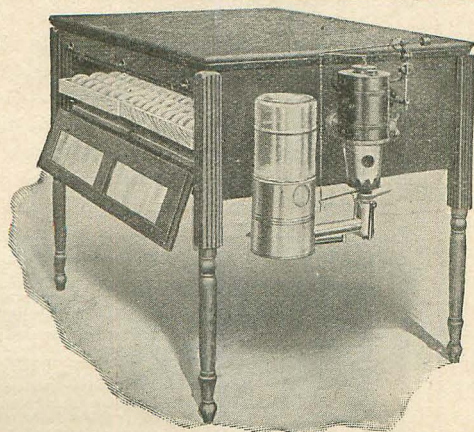
Write for descriptive circular. Address, W. F. Holcomb, Mgr., Nebraska Poultry Co., Clay Center, Nebraska.

1900-C. C. DIBLEY & SON-1913

QUALITY—UTILITY—EXHIBITION

Single Comb Rhode Island Reds, Barred Plymouth Rocks, White Plymouth Rocks, Light Brahmas, Buff Wyandottes.

BIRDS OF HIGHEST QUALITY: Winners in the following shows 1913: Minneapolis and St. Paul, Minn., Fargo & Valley City, N. D. Mating list free. WOLVERTON, ROUTE 1, MINN.



The Blue-Ribbon Incubator of Quality -

If you want Success in the poultry business, the first and greatest thing is a good Incubator. You get this when you buy a Blue Ribbon, built of the best white pine, strong and neat. First class heating system made of pure lake-copper, which never rusts. Regulator on side of machine out of the way. Top clear like a table. Chick tray in nursery. Double walls with dead air space. Extra thick insulation in lid and a lot more strong features not found in other machines. In fact the Blue Ribbon is a Quality Machine. No thin iron—no paste-board—no knotty lumber—no inferior stuff used. Goes out ready to start. You don't have to put 100 pieces together as you do with some others.

It is an Automatic Incubator, as it has an automatic lamp, regulator, ventilation, moisture and heating system. It is the incubator that hatches good, strong, healthy chicks with less labor and less expense than any other incubator on the market.

We also have purebred chickens, including Dark Brahmas; Black, Buff, White, and Partridge Cochins; White Leghorns; S. S. Hamburgs; Blue Andalusians; W. F. B. Spanish; Pekin and Rouen Ducks; Embden and Toulouse Geese; M. B. Turkeys, and White Holland Turkeys. Eggs for hatching. Write for free catalogue.

C. H. Ahrens

Fargo, N. D.

School and Home

WHERE THE WEST BEGINS By Arthur Chapman

Out where the handclasp's a little stronger,
Out where a smile dwells a little longer,
That's where the West begins.
Out where the sun is a little brighter,
Where the snows that fall are a trifle whiter,
Where the bonds of home are a wee bit tighter,
That's where the West begins.
Out where the skies are a trifle bluer,
Out where the friendship's a little truer,
That's where the West begins.

JOURNAL OF A FEMALE HOUSE FLY

Thursday, Nov. 2, 1911—Went into winter quarters. Barely lived thru the long hard winter.

April 20, 1912—Came out of winter quarters and laid my first batch of eggs—120 in number—in a manure heap.

April 21, 1912—My first 120 eggs have hatched.

April 22, 1912—Larvae have undergone first molt.

April 23, 1912—Larvae have undergone second molt.

May 21, 1912—Laid my fourth batch of eggs. Left alone and unhindered, by Sept. 10, 1912, my descendants will number 5,598,720,000,000.

WASHING BLANKETS, QUILTS AND COMFORTERS Mrs. W. C. Palmer

To wash blankets, quilts and comforters, choose a warm sunny day so that they will dry as quickly as possible. Use soft water if it can be obtained.

Blankets. Woolen blankets should be washed in luke warm water, never in hot or cold water as it shrinks them. Use a good white soap or some reliable woolen soap. Put the blankets to soak for fifteen minutes in warm water, soaping the blanket as it is put in the tub, putting on a little extra soap where the blanket is most soiled. After allowing to soak, work the blanket



"The Wise Farmer Plans for Trees and a Garden" (A Billings County Home)

Out where a fresher breeze is blowing,
Where there's laughter in every streamlet flowing,
Where there's more of reaping and less of sowing,
That's where the West begins.
Out where the world is in the making,
Where fewer hearts with despair are aching—
That's where the West begins.
Where there's more of singing and less of sighing,
Where there's more of giving and less of buying,
And a man makes friends without half trying—
That's where the West begins.

April 26, 1912—Larvae transformed into pupae.

May 1, 1912—One hundred and twenty full grown flies, sixty of which are females.

May 3, 1912—Laid my second batch—120 eggs.

May 13, 1912—One hundred and twenty flies came from my second batch of eggs. Laid my third batch in a kind neighbor's garbage can.

May 20, 1912—The city has offered a prize to the school child who will kill the largest number of flies. The boy at the house where I live is killing flies right and left. And to think—we have all been eating at the same table with him.

around in the tub, rubbing between the hands and applying more soap where needed. Souse the blanket several times and wring into another warm water, going over blanket to see if any soiled places have been missed. Rinse a second time, wringing the blanket as free from water as possible. Shake well before hanging up to dry. Roll each corner a trifle and pin

DAISY FLY KILLER



placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for \$1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

with a small safety pin to prevent the corners from whipping out. When dry they will be fluffy and soft, ready to fold away for another winter. Another way is to stretch the blankets on curtain stretchers, putting them on double.

Comforters. Never rinse comforters in cold water as it tends to harden the cotton batting. Comforters are washed in the same way as blankets only the water should be fairly hot and they should soak a couple of hours in a good hot soapy water

to loosen up the dirt. The ends or any parts may be rubbed on a washboard or washed in the washing machine. After the comforters are dry, roll and beat with a smooth round stick. This will loosen up the cotton and make the comforters more fluffy.

Quilts. Wash same as the comforters except that where the colors will not run they should be scalded to make them more clear and fresh.

The Art of Bread Making

Katharine Jensen, Dept. of Home
Economics, Agricultural College
North Dakota

There are numbers of successful methods of making good bread, but there is a distinct lack of knowledge regarding the exact reasons for success or failure. Altho the art of bread-making dates back to the remote periods of civilization it is only within the last sixty years that the scientific aspects of bread-making have been studied in a systematic manner. As a result of such scientific investigation relating to home industries was written "The Song of the Scientific Housewives." It runs something like this:

'Before we learned to do things right we
always used to cook
Without so much as looking at a dietitian's
book;
But this is not the way as science has made
plain,
And now as we prepare the meals we mur-
mur this refrain:
There's nitrogen, and hydrogen, a small
per cent of fat,
The carbohydrates, gluten, starch—re-
member all of that;

The right proportion must be found in
every meal each day,
For 'tis the only accurate and hygienic way.

"Pa used to plead for pork and beans, the
children called for cake,
The boarders begged for pumpkin pie
whenever we would bake,
We used to try to please them all in our
misguided way,
But now as we prepare the meal beneath
our breath we say:
There's nitrogen and hydrogen, a small
per cent of fat,
The carbohydrates, gluten, starch—re-
member all of that,
The right proportion must be found in
every meal each day,
For 'tis the only accurate and hygienic
way.

"Pa hopes in vain for ham and eggs, the
children can't have pie;
The boarders one and all have left—we
often wonder why.
We steadfastly decline to do the way we
know is wrong,
And as we cook the daily meals we hum
the well-known song:
There's nitrogen and hydrogen, a small
per cent of fat,
The carbohydrates, gluten, starch—re-
member all of that,
The right proportion must be found in
every meal each day,
For 'tis the only accurate and hygienic way."

So, the song of the scientific housewife will long continue, even lengthening as time elapses for each year science makes discoveries for the housewife which are well worthy of being put into verse. Science and mechanics have caused the primitive art of bread-making to develop into a wonderful industry.

Until about sixty years ago every step in the operation of bread-making was carried out by hand; today every step

from the mixing of the dough to the cutting of the bread into slices for the table can be carried out by machinery.

One of the most interesting results in the development of this industry is that the United States assumes the leadership of the world as a bread-producing country. Many of the largest modern bakeries turn out 4300 loaves of bread per day. However, only fifty per cent of the bread consumed in the United States, estimated at one-half pound per capita is made in the bakeshops. The other half is made in the

A Paint Lesson

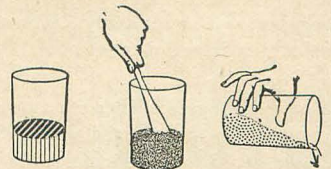


TO a paste made of white lead and water, add linseed oil and stir.

Watch the oil drive out the water! Presto! an oil paste instead of water paste.

Dutch Boy White Lead and Dutch Boy Linseed Oil rush together and cling together just that way on the house painted with them.

What chance has rain or snow to dissolve such paint?



White lead and water, with layer of linseed oil.

Mixture of white lead, linseed oil and water.

Water poured off, leaving white lead and linseed oil.

Dutch Boy White Lead—white in the keg—any color you want to make it on the house.

Dutch Boy White Lead in steel kegs, 12½, 25, 50 and 100 lbs. Dutch Boy Linseed Oil, 1 and 5 gallon sealed cans. Ask your paint dealer. Let us send you "Painting Packet 33" full of facts every house owner should know about painting. Also "Handy Book on Painting," full of information for the man on the farm. We will include our catalogue of 100 beautiful stencils for walls.

NATIONAL LEAD COMPANY

New York Boston Buffalo
Chicago Cincinnati Cleveland
San Francisco St. Louis
(John T. Lewis & Bros. Co., Philadelphia)
(National Lead & Oil Co., Pittsburgh)

THE man who looks for the Red Ball on the rubber footwear he buys and insists on seeing it can be sure of getting "Ball-Band" quality which means the best that can be made. Figure the cost of your rubber boots on the cost per day's service and "Ball-Band" Boots are not only the lowest priced but the best.

"BALL-BAND" BOOTS

Look for the Red Ball sign in stores. 45,000 dealers sell "Ball-Band" Boots.

Send for Free Illustrated Booklet
Mishawaka Woolen Mfg. Co.

324 Water St.
Mishawaka, Ind.

"The House that Pays Millions for Quality"

homes, hence the importance of bread-making as a home industry becomes apparent. So long as so much of this bread-making industry remains in the home it gives to the intelligent housewife an opportunity to set the standard and to create a demand for really good bread. She is the judge upon whom others rely, hence she must know how to produce an ideal quality. She must realize that it is her duty to set before her family and friends the best product possible. By doing this she creates in the consumer a taste for a superior product. Having cultivated in the home a taste for excellent quality bread, these who later on in life thru necessity or otherwise are compelled to buy their bread in the bakeshops will no longer be satisfied with the sour, soggy, doughy, half-baked indigestible bread such as many of the bakeshops in the United States offer to the public today. Just so long as the consumer is willing to buy the sour and soggy bread made in the bakeshops just so long will the bakeshops continue to offer such a quality of bread. A proper demand will force a proper output. If the consumer recognizes and so refuses to buy an inferior product, the bakeshops will be forced to better the production. It must come. So, again is it important that the housewife make her standard of bread the best possible. By so doing she will in time compel the production in the United States of a high standard of bread.

There are various standards of bread already established by universal opinion. Some accepted English authorities who have set forth standards are Owen Simmons, and William Jago. The United States Government has also done a considerable amount of work which is recorded in bulletins by Snyder, Woods, Vorhees, and Helen Atwater. Maria Parloa is another American worthy of mention in this connection.

The characteristics of good bread as set forth by such authorities are, in general, as follows:

Flavor

Odor, taste—a sweet nutty flavor of the wheat grain and a sweet odor.

Crumb

Texture—the gas cavities must be small and evenly distributed and the cell walls be thin and delicate.

Color—creaminess rather than whiteness.

Tenderness, elasticity—crumb must be tender and elastic.

Moisture—the crumb must be neither dry and crumbly nor doughy. Absence of heavy streaks either of side or bottom or in center of loaf.

General Appearance

Crust—a uniform golden brown, in thickness about $\frac{1}{8}$ inch.

Size and Shape—Symmetry of size and shape.

In order to be intelligent about the art of bread-making it is necessary that the housewife have an understanding knowledge of the materials from which bread is made, especially of the flour. There are some physical tests of flour which are practicable and valuable for use in the home. By means of these tests the housewife may become intelligent about the differences in flours and so be able to interpret those differences in bread-making processes.

The color, feel and taste tests are simple and valuable, tho not infallible in judging the kind, the condition and the age of flour.

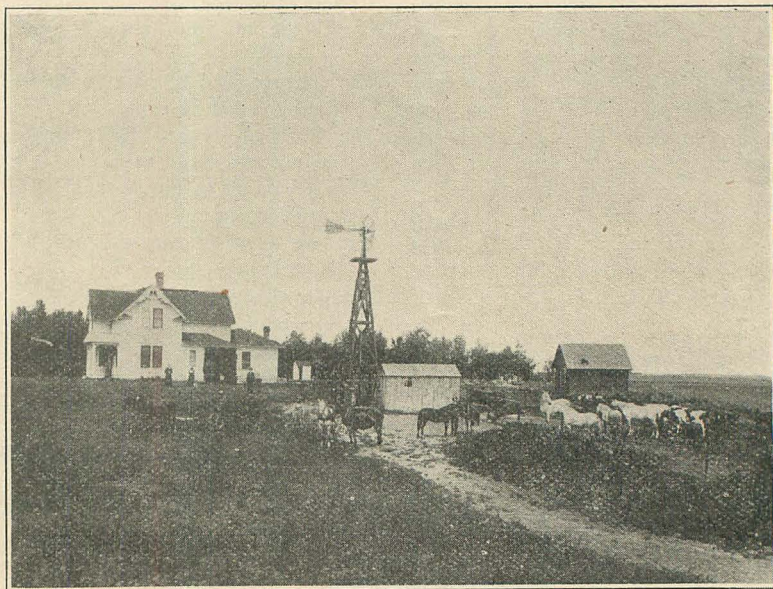
A good bread-making flour should be creamy white in appearance, not a gray nor a dull dead white color—a gray color indicates that the flour has been bleached either thru age or by chemical means; a white color indicates a large proportion of

in taste it is not fit for use—the gluten has deteriorated.

Liquid—In bread-making a large proportion of liquid gives a soft dough, a well-shaped loaf, slightly flat on top, of small volume, proportionately heavy weight, coarse-texture, dark clammy crumb and somewhat dull crust. A small proportion of liquid gives a stiff dough, a loaf strongly inclined to crack open during baking, well rounded on top, of proportionately heavy weight, fine texture, white dry crumb and bright crust. A moderately stiff dough gives the most satisfactory bread. Long process bread requires less liquid in proportion to the flour than does short process.

Water produces a fine textured, sweet, nutty flavored, inelastic bread which dries out quickly on keeping.

Milk increases the color of the crust,



Home of Robert Pherigo near Sheldon, N. D.

starch, while a pronounced creamy tint suggests gluten of more or less good quality.

If the color of a flour is not maintained in the bread when baked, the reason is generally to be found in the manipulation employed in the bread-making process.

Flour which is good for bread-making proposed should be also granular in feel, thus indicating a large percentage of gluten in proportion to its starch content. If the starch percentage is proportionally large, the flour has a smooth and powdery feel. Further, flour when pressed in the hand should fall loosely apart; if it stays in a lump the flour contains too much moisture. A flour in its best stage for baking (a few months old) is creamy white in color, granular in feel and sweet in taste. When two years old, flour kept at ordinary room temperature, is not fit for baking. If it is gray in color and inferior

elasticity of the crumb and the keeping qualities.

Buttermilk lessens the time of rising, increases the elasticity of the crumb, the bloom of the crust and the keeping qualities, but leaves an unpleasant after-flavor.

Potato water increases the lightness, elasticity, crust, color, and especially the keeping qualities of the bread.

Yeast—Yeast, if introduced in small quantity into a sponge, will multiply until it assumes a maximum concentration; if introduced in larger quantity it will cause a greater immediate production of gas, but will not give a more vigorous sponge ultimately. Hence, if allowed a sufficient time in a sponge a small quantity of yeast will give the same results as a larger amount.

Bacteria are an accompaniment, but not necessarily a cause of deterioration of

yeasts. The problem of carrying liquid yeasts successfully is chiefly one of keeping the yeast active by frequent change of medium, thus supplying fresh food and oxygen, and lessening the concentration of harmful by-products. Potato water is a better medium than a flour sponge, as the latter sours more readily.

Salt—Salt retards yeast fermentation in bread-making processes, but when used in proper portions, not more than one teaspoonful per cup of liquid, increases the volume, improves the flavor of bread and makes the crumb more tender, elastic and of better texture; more than one teaspoonful of salt per cup of liquid causes deterioration of the crust, lop-sidedness of the loaf and makes the crumb tough, and moist, gray in color and poor in flavor and texture.

Sugar—Sugar hastens yeast fermentation and when used in proper proportions not more than two teaspoonfuls per loaf, or per cup of liquid, improves the flavor, elasticity and moisture of the crumb; more than two teaspoonfuls of sugar per loaf, makes the crumb tough, moist, coarse in texture, poor in color and too sweet.

The relative proportions of one teaspoonful of salt to two teaspoonfuls of sugar per loaf, or per cup of liquid gives the best quality of bread.

Bread barely doubled in bulk, and allowed to rise in the oven will reach the same maximum volume attained by bread risen entirely outside, and will in addition, be of a much finer texture, better color, and increased tenderness and silkiness. More care is required in baking however.

Kneading—The character of the kneading is of greater importance than the time. A kneading stroke which thoroughly incorporates every particle of flour with a particle of yeast is the ideal to be attained. This increases whiteness and fineness of texture (but not lightness, sponginess, nor flavor).

Molding—A thoro kneading when molding the dough into the loaf produces a bread of small volume and dull crust, but one which is of good shape and fine texture; molding lightly without kneading produces a spongy, elastic bread and one which is of silken crumb, bright crust, and good volume.

Dough raised at too high a temperature results in a loaf of small volume, coarse texture, and dull, unattractive crust. Chilling of the dough lessens the volume, toughens the crumb, and produces compactness and coarseness of texture. The best range of temperatures for raising doughs is 27 to 35 degrees Centigrade.

The baking must be regulated according to the degree of lightness of the dough. A high temperature produces a hard, thick crust, lacking crispness and bloom; if the dough is not over light, bursting occurs, and large holes are produced in the crumb.

Under the conditions of these experiments the most satisfactory baking tem-

perature for loaves risen till almost doubled in bulk in the pans is 180 degrees for 10 min., 180 to 235 degrees, rising gradually during 15 min.; and 218 degrees for 20 min.

THE FARM BOYS' ENCAMPMENT

One hundred and twenty farm boys, under the auspices of the Better Farming Movement of North Dakota, will have the time of their lives at the Valley City Chautauqua Assembly, June 27-July 13, 1913.

These young men will be selected, within a radius of fifty miles of Valley City, by the Better Farming Association in conjunction with the Chautauqua management. The selection will be made on a competitive basis, the rules of which will be announced later by Thomas Cooper of the Better Farming Association. A fee of \$5 will be collected from each of the boys chosen, for which tents, cots, board and admission to the Chautauqua for the whole period of the Assembly will be given.

The encampment will be under military regulation and in charge of a regular commissioned officer, the instruction being under the direction of a corps of teachers from the North Dakota Agricultural College, the Better Farming Association and the Valley City Normal School, assisted by competent Physical Directors.

The forenoon of each day will be given over to study and class work; the afternoons and evenings to boating, swimming, fishing and enjoyment of the Chautauqua program.

This Farm Boys' Encampment will be an absolutely unique feature—a new departure in Chautauqua enterprise—serving to emphasize the fact that the farm boy is coming into his own. The farmer of the future will be the aristocrat of the nation.

These one hundred and twenty boys who will be selected from as many families, to have a part in the Chautauqua en-

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campment, will get a vision of things to come.

It is the purpose of the management to make this feature of the Valley City Chautauqua a permanent one and next year to add a Farm Girls' Encampment.

FINDING MARKET VALUES OF DAIRY PRODUCTS

G. L. Martin, Prof. of Dairying, N. D. Agricultural College

It is important that every dairyman know how to find the comparative market values of the various forms of dairy products.

A good way to establish an easy working basis is to take a hundred pounds of average milk and figure it at local prices for the different forms.

If we commute the price of average 3.5% milk at 5 cents per quart; 25% cream at 40 cents per quart; butter at 25 cents per pound, cheese at 12 cents per pound, and ice cream made from 25% cream at 30 cents per quart with any by-product as skim milk or buttermilk at one-half cent per pound, what will be the total returns from each form of marketing?

Milk. A quart of average milk will weigh 2.15 pounds; at that figure 100 pounds of milk will equal 46.5 quarts. Total market value 46.5 quarts at 5 cents equals \$2.33

Cream. Rule. To find amount of cream. Multiply the quantity of milk by the test and divide by the test of cream. To find the amount of skim milk: Subtract the quantity of cream from the total amount of milk.

According to these rules 100 lbs. of milk will contain 14 pounds of 25% cream and 86 pounds of skim milk.

One gallon of 25% cream will weight about 8.3 pounds. At this figure 14 pounds of cream will equal 1.68 gallons.
1.68 gal. at \$1.60.....\$2.69
86 lbs. skim milk at $\frac{1}{2}$ cent.... .43

Total market value.....\$3.12

Butter. In making butter the overrun usually amounts to about 20% and is to be added to the total amount of butterfat.

A 100 lb. of the above milk will contain 3.5 pounds of butterfat.

3.5 lb. increased by 20% O. R.=4.2lb. of butter

4.2 lb. butter at 25 cents.....\$1.05
86 lb. skim milk at one-half cent.... .43

Total Market Value.....\$1.48

Cheese. One pound of butter fat yields about 2.7 pounds of cured cheese.

100 lbs. of 3.5 %milk..... 9.45lbs.
9.45 pounds at 12 cents.....\$1.13
Whey from 100 lbs milk..... .10

Total Market Value.....\$1.23

Ice Cream. A gallon of 25% cream weighs 8.3 lbs. which will give 1.68 gallons from 100 lbs. of milk. In making the ice cream the overrun will amount to 40% on the average. With this addition 1.68 gallons equals 2.35 gallons of ice cream.
2.35 gallons at \$1.20.....\$2.82
86 lbs. skim milk at one-half cent.... .43

Total Market Value.....\$3.25

With the comparative market values of products from 100 lbs. of milk, one can readily figure the returns from a cow or the herd. This will necessitate a knowledge of the weight of the milk in each case.

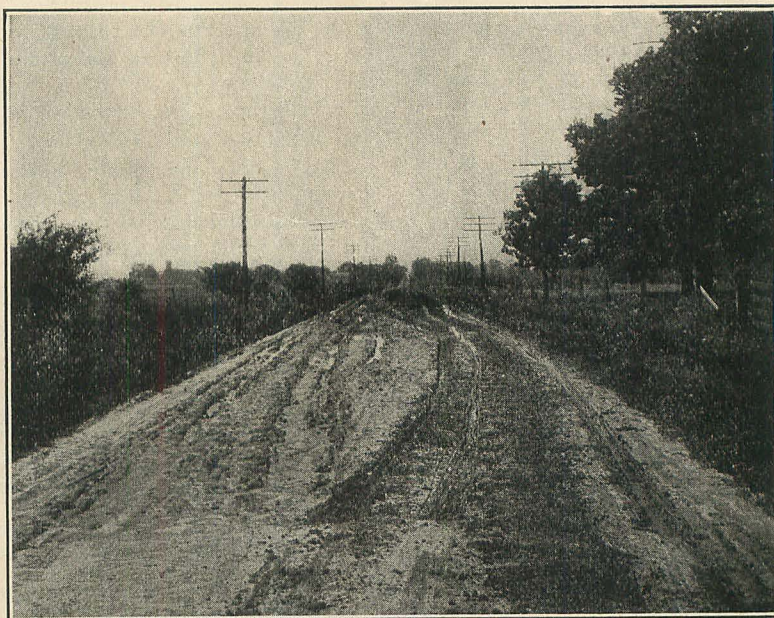
COUNTY AGRICULTURAL AND TRAINING SCHOOLS

Benson County is Establishing a County Agricultural and Training School.

The last North Dakota legislature passed a law providing for the establishment of County Agricultural and Training Schools. Wisconsin has many of them. They have proved a valuable addition to the educational system. The plan is this: The county puts up the buildings, for

the rural schools. The regular normal school graduate will not as a rule teach in the rural schools, while the graduates of the county normal agricultural schools will have a training that fits them for this work, that puts them in sympathy with rural life. It will also have the advantage of bringing this school within driving distance of nearly all parts of a county. These county and agricultural and training schools will also be just the place for the boy or girl that wants to take some work in agriculture or home economics. These schools will serve the rural community better than any schools that have yet been organized. The schools and normals and universities look toward city life, prepare for city life. They only look to the country to draw the brightest boys and girls from it.

Benson County is to be congratulated on having made the start. To secure such a school, the first step is to get up a petition with 300 signers. The County Commissioners must then put the proposition of establishing such a school to a vote. Either at the regular election or at a special election. If a majority vote for it then the school is established.



"A Poor Road is Like a Leak in the Pocketbook"

which a tax of \$10,000 to \$20,000 can be levied. The maintenance which is not to exceed \$6000, is divided equally between the county and the state.

The subjects to be taught are agriculture, home economics, manual training, and training of teachers. One of the many objects of these schools is to train teachers for the rural schools. If it is desired to keep the boys and girls on the farm agriculture and home economics must be taught in the schools.

The county agricultural and training school is the place to train the teachers for

MAINTENANCE OF IMPROVED ROADS

The present year promises to be the greatest in the history of the movement for the improvement of the public roads of the United States, according to the reports received from all parts of the country by Secretary Wilson of the United States Department of Agriculture. A joint committee of Congress is engaged in an investigation of the feasibility of Federal aid in the construction, improvement, and maintenance of public highways, and a

number of the State legislatures now in session are considering good road legislation. In connection with the general impetus that the good road movement has recently had in all parts of the country, the Director of the Office of Public Roads says:

"Too much stress can not be laid upon the importance of maintenance in connection with the work of improving the roads. The people in nearly all the states are filled with enthusiasm for road improvement and are spending enormous sums of money in the construction of superb roads, and yet almost without exception they are making little provision to care for the roads after they are built. This is true not only in the various counties, but under many of our state highway departments.

"To maintain the roads in good condition year after year requires a considerable annual outlay, but this outlay is infinitely less than the loss which must fall upon the people eventually if they allow their roads to go to utter ruin. The thing for all advocates of good roads to do is to urge continuous, systematic maintenance and the setting aside every year of an amount per mile estimated by the engineer in charge to be sufficient for the proper maintenance of the road—a course which must make for economy and efficiency."

NEED FOR BETTER RURAL SCHOOLS

Richard Hamilton Byrd

The national council of education, at its recent meeting in Philadelphia, took up the subject of rural education seriously and found that a substantial part of the high cost of living was blamed on the defects of the rural school. Boys who otherwise would stay at home and help to increase the production of farm products drift away to the city in search of an education and never come back. Labor cannot be found in sufficient supply to grow the crops.

In this connection an investigation conducted by the United States Bureau of Education shows that not immigration, but the lack of educational opportunities in rural districts, is chiefly responsible for the relatively high rate of illiteracy in the United States. The rate of rural illiteracy is twice the urban rate, despite the fact that approximately three-fourths of the immigrants are in the cities.

Among other things it was ascertained that there are 226,000 one-teacher school-houses in the United States, of which 5,000 are log buildings still in active use. Altho more than 60 per cent of the children in the United States are enrolled in country schools, the rural aggregate attendance is only 51 per cent. The school buildings and grounds in most country districts are in a condition that is only approached by "homes of the most shiftless residents of

the district," and the average teaching in these one-teacher schools is of very low grade.

AGRICULTURAL CREDIT SYSTEM

Following the steps of former President Taft, the new Executive has heartily endorsed the proposal for the establishment of an agricultural credit system. No one denies that there should be an agricultural credit system such as will give the farmers the same kind of elastic credit that is enjoyed by business men. At the present time the farmers must put mortgages on their homes or give other real estate security, even when they need loans for only a few weeks or a few months.

There are times when farmers need a few hundred dollars to tide them over the harvesting period, but a small loan causes them just as much trouble and embarrassment as a large one. The banks do not care to go thru all the formalities of a mortgage transaction for a short loan of a small sum of money.

Most of the states are already co-oper-

ating in the work of establishing an agricultural credit system, all realizing apparently that the government alone cannot meet the needs of the situation. Governor Sulzer of New York has shown a sincere desire to aid the movement by appointing a commission, which includes Vincent Astor and Chairman Yoakum of the Frisco lines, to go to Europe to make a

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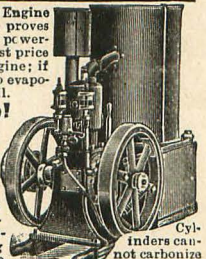
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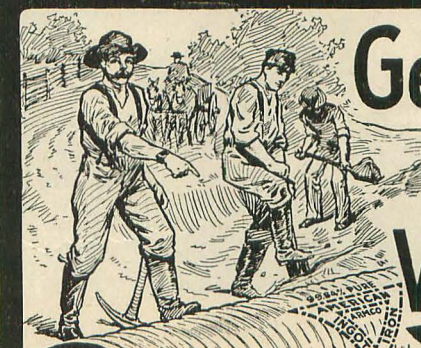
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Publisher, THE HIGHWAY MAGAZINE

534 Walnut Street

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three-months' study of the various European systems of agricultural credit.

The Southern Commercial Congress is taking an active part in the movement, and is giving every assistance to the investigators who will go to Europe. By next year there should be real results from the plan set on foot by Mr. Taft.

FARMERS WILL FORCE CITIES TO SUBMIT

During the course of an address delivered recently by Prof. D. C. Corbett of the Department of Agriculture, the prediction was made that unless the farmers receive just prices for their produce, they are going to unite the country over and starve the cities into paying them anything they ask.

"We complain, for instance of the high cost of milk," said Prof. Corbett; "yet

RAILROADS HELPING THE FARMERS

Number of Demonstration Farms Increased

Valuable Pointers About Various Crops

For some time the Northern Pacific Railway has been engaged in conducting agricultural demonstration farms in North Dakota and Montana, both for the benefit of the various farming communities where the farms are located and for its own purposes of investigation and improvement.

In Montana these experiments have been in charge of officials of the Montana Agricultural College and the U. S. Experiment Station and have had most beneficial results. In North Dakota these farms

each, and they have been handled in a thoroughly practical as well as scientific manner by resident farmers under Prof. Shaw's supervision.

The conclusions of Prof. Shaw regarding the various crops, briefly summarized, are as follows:

Winter Rye—This crop produces large yields when sown on corn land in late August, whether amid standing or cut stalks. When drilled in grain stubble at the same time, it grows well, but does not yield so heavily. It is of great assistance in cleaning the land and is one of the safest and surest grain crops that can be grown in North Dakota. The yield on corn ground was $26\frac{3}{4}$ bushels an acre, and on stubble 17 bushels.

Winter Wheat—Grows well when sown during latter part of August on ground where the corn stalks are still standing, but there is great risk in sowing it in



A Stockman's Home in the Slope Country

hardly a dairy in the United States is paying a reasonable percentage on the investment. The city man constantly demands a better quality of food, a better service; and greater attention from the dealer. These demands stimulate the dealer to ask higher and higher prices, but the producer rarely receives his proper share of the advance.

"The problem of the high cost of living does not rest with the farmer for solution. He has been striving for years to produce more crops at less cost, and he is doing it. We must also work on the other side of the problem—how to get the farmer's produce to the consumer economically and in proper condition.

"I am glad that the conditions which lead to this question of the high cost of living are in existence. The city has long been drawing apart from the country; the solution of the high-living cost problem will bring them back again."

Are you boosting the North Dakota Farmer? One year, 50 cents; three years, \$1.00.

have been superintended and developed by Prof. Thomas Shaw, the well known agricultural authority. An addition to the agricultural staff for 1913 has been made. Mr. R. F. Murray will give special attention to the demonstration work and Prof. Shaw and he will work in earnest co-operation. The object of these farms is to determine the best conditions under which crops of all kinds can be grown by means of the so-called dry farming methods. This includes soil preparation and cultivation, crop rotation, the determination of the varieties of grains and vegetables best adapted to particular soils and localities, etc. Prof. Shaw has just concluded his studies of the results of the demonstration farms for 1912. These results have been such that the number of farms the Northern Pacific will operate in 1913 under the direction of Prof. Shaw and Mr. Murray will be doubled. They will be located in the country between the Missouri River and the Montana boundary line in North Dakota.

The farms consist of six or more acres

corn stubble or even on summer fallow where unprotected. Pasturing destroys it. Yields 40 bushels an acre on corn stalk land.

Corn Fodder—One of the most important crops in North Dakota. Assists greatly in cleaning the land and furnishes dry fodder or silage for livestock, also conserves moisture for crops that follow. Experience shows that the ears of corn will generally mature even with Minnesota No. 13. Corn grows well on stubble land. Yields $2\frac{1}{2}$ tons to the acre.

Peas and Barley—Canada field peas and white hullless barley make a splendid combination for producing grain hay. Three to four pecks of peas and two of barley to the acre should be sown. Yields three tons or more to the acre.

Alfalfa—Experience demonstrates that while there is no difficulty in securing a good stand, yields on land not properly prepared are unsatisfactory. More experimentation is called for in growing this crop which promises much for North Dakota.

At the demonstration farm at Elgin

28 acres were plowed in October, 1911, and disced and harrowed as early in 1912 as possible. Land had previously been worked for several years, but at this time was a mass of Russian thistles, rose bushes and weeds.

Corn—This crop covered 14 acres and included seven varieties of corn, one to three acres being used for each variety. Hills $3\frac{1}{2}$ feet apart both ways. All corn plots harrowed after planting and before and after the corn was up. Plots were given frequent cultivation, in many cases seven or eight times.

Of squaw corn, 12 to 14 pounds to the acre were used. Harvested September 27. No. 1 plot cut for fodder; nearly all the ears matured. Yield of fodder, $1\frac{1}{2}$ tons. On plot No. 2 the ears were harvested; yield, 40 bushels an acre.

Of Northwestern Dent, 14 to 15 pounds of seed to the acre were used. Planted May 16, ears pulled October 20. Yield, 35 bushels an acre. Most of the corn matured. Fodder left standing.

Of Rustlers White Dent corn, 12 to 14 pounds to the acre were planted May 16. Ears were pulled November 10. Yield, 50 bushels an acre. Corn fairly well matured. Fodder left standing, estimated $2\frac{1}{2}$ tons to the acre cured.

On the preceding corn plots Turkey Red winter wheat was planted in the fall of 1912 in the standing fodder at the rate of one bushel to the acre.

Of South Dakota White Flint, 12 to 14 pounds to the acre were used. Planted May 17, harvested October 22. Ears not matured, but yielded $3\frac{1}{2}$ tons of cured fodder.

On August 24, 1912, winter rye was drilled in at the rate of five pecks to the acre. Several acres of Turkey Red winter wheat were also sown amid the corn stalks at the rate of four pecks an acre.

Of Minnesota No. 13 corn, 10 to 12 pounds to the acre were used. Planted May 17, harvested October 21. Ears reached the roasting stage, but none were fully matured. Yielded $2\frac{1}{2}$ tons of cured fodder to the acre.

Stowell's Evergreen Sweet Corn—12 to 14 pounds of seed to the acre were planted May 17. Stalks were cut October 28. Many good roasting ears were found, but none matured. Fodder yield, $2\frac{1}{2}$ tons to the acre, cured.

Grain Crops—Ground was very "Weedy" and owing to frequent harrowing, up to the point where the grains were six inches high, the weeds were largely overcome in most cases. White, hullless barley produced 20 bushels to the acre, using four pecks of seed in sowing.

Of Durum wheat, one acre drilled on April 20 at the rate of four pecks to the acre and harvested August 8, yielded 32 bushels of excellent quality.

One acre of Garton's Senator oats sown, April 20, harvested August 8, yielded 75

bushels by measure, 94 bushels by weight, using five pecks of seed in sowing.

Two acres of Sainfoin drilled in on June 4, 20 pounds to the acre, were clipped early in August owing to the prevalence of weeds. Standing was a little thin and the growth only fair.

One acre of alfalfa drilled in on June 4, using eight pounds of seed, grew very encouragingly. It was clipped early in August. The ground was inoculated by 400 pounds of earth taken from an old alfalfa field.

Garden Products—One acre devoted to garden products in small plots gave yields, by the acre, as follows:

Onions from seed, at rate of	600 bushels
Garden or table beets, at rate of	600 bushels
Turnips, at rate of	825 bushels
Rutabagas, at rate of	900 bushels
Late carrots, at rate of	750 bushels
Mangels, at rate of	1,000 bushels
Cabbage, at rate of	$7\frac{1}{2}$ tons

Beans, cauliflower, radishes, lettuce,

pumpkins, squashes and melons all do well, and many tomatoes ripened.

Potatoes—One acre planted to Early Ohio and Burbank potatoes yielded at the rate of 150 bushels and 200 bushels to the acre, respectively, the quality being all that could be desired.

An additional information regarding these demonstration farms will gladly be supplied by addressing Prof. Thomas Shaw, Agricultural Expert, St. Anthony Park, St. Paul, Minn.

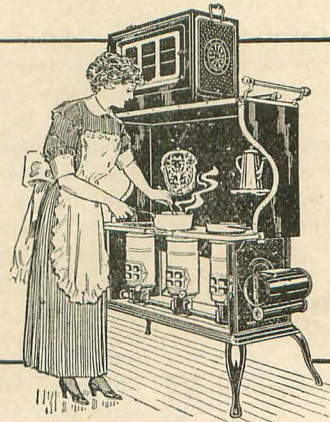
20 Reasons Why You Should Investigate the **SANDOW** Kerosene Stationary ENGINE



It runs on kerosene (coal oil), gasoline, alcohol or distillate without change of equipment—starts without cranking—runs in either direction—throttle governed—hopper cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—portable—light weight—great power—starts easily at 40 degrees below zero—complete, ready to run—children operate them—5-year iron-clad guarantee—15-day money-back trial. Sizes 2 to 20 H. P. Send a postal today for free catalog, which shows how Sandow will be useful to you. Our special advertising proposition gives you one-half cost of first engine sold in your county. (167)

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Dandy 72-page Cook Book mailed Free to any address on receipt of five cents in stamps to cover cost of mailing. Send for it today.



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The Comforts of the City Kitchen Brought Home to the Farm

Install a NEW PERFECTION Oil Cook-Stove, Madam, and immediately transform your kitchen into a City Kitchen, with all the convenience and efficiency afforded by gasoline or gas but *with one-third to one-half less expense*. The handy Cabinet Shelf makes it an all-the-year-'round cook-stove.

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is a wonder. Eliminates the dirt, dust and delay of using coal. More heat units than gas or gasoline and minus their odor. Perfectly safe.

Lights on the instant, producing a true blue flame. Boils, broils, bakes, roasts or toasts.

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Equipped with the new oil reservoir and indicator; and with or without portable oven, cabinet shelf, odorless broiler, special toaster, aluminum pan cake griddle.

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STANDARD OIL COMPANY

(AN INDIANA CORPORATION)
CHICAGO, ILL.

(95)

Seasonable Receipts

Jelly Roll Cake

Four eggs, pinch salt, beaten light, one cup sugar, one cup of flour in which has been sifted one teaspoon of baking powder. Flavor. Bake in long bread pan in quick oven. Turn out while hot on wet cloth. Spread at once with jelly and roll folding the wet cloth around it to prevent edges from breaking.

Angel Food Cake

Whites eleven eggs, one and one-half cups fine granulated sugar, one cup flour sifted four times with one teaspoon baking powder, one teaspoon vanilla. Whip the whites to a firm, stiff froth. Cut in lightly the sugar, then the flour mixed with the baking powder, lastly the vanilla. Pour into an ungreased pan and bake 40 minutes in moderate oven. When baked invert pan on two cups; let stand till cold.

Little Chocolate Cakes

Two tablespoons butter, one cup sugar, one half cup water, one and one-half cups flour, pinch salt, one teaspoon baking powder, two eggs, four tablespoons grated chocolate melted over hot water, one teaspoon extract vanilla. Put together as for cake with butter; bake in patty-pans in moderate oven.

Cinnamon Cakes

Whites four eggs, one-half cup sugar,

one cup flour, one-half teaspoon baking powder, two tablespoons cream, one teaspoon extract cinnamon. Mix as for cakes without butter, and bake in patty-pans in a quick oven. Ice with water icing flavored with cinnamon extract.

Spice Drop Cakes

Yolks three eggs, one-half cup butter, one cup molasses, one-half cup milk, three cups flour, two teaspoons baking powder, pinch of salt, spice to taste. Drop on buttered paper on tins, and bake in hot oven.

Maple Sugar Frosting

Boil one-half pound broken maple sugar with three tablespoons water till dissolved and thick enough to rope when dropped from fork. Pour gradually on whipped whites of two eggs. Beat till thick enough to spread.

Fried Liver and Bacon

Have liver sliced medium thin, lay in pan and pour over boiling water so that all parts may be covered. Let stand a few minutes; pour off the water and roll liver in flour or fine crumbs. Fry bacon to nice crisp, brown and remove from skillet, leaving the hot fat into which lay liver and cover with tight tin cover; let fry one-half hour turning on both sides until a nice brown.

Beef Steak Smothered in Onions

Slice the onions thin and drop in cold water; place steak in pan with little suet; skim out onions and add to steak; season with salt and pepper; cover tightly and place over fire. When juice of onions has dried away, remove onions, turn steak, replace onions and fry until tender. Be careful not to burn.

Scalloped Ham with Macaroni

Put one tablespoonful butter in saucepan, when bubbling, stir in one heaping tablespoonful flour. Gradually add one and one-half cups scalding milk. Season with salt and pepper and boil until smooth. Take one cup of finely chopped ham, two cups cold boiled macaroni cut in one-half inch lengths. Sprinkle the buttered baking-dish with fine bread crumbs and fill with alternate layers of ham, macaroni and sauce. Cover with bread crumbs and dot with butter and bake in quick oven until brown.

Prune Pudding

One pound prunes soaked over night in cold water. Cook four hours. Chop fine; whites of three eggs beaten to a stiff froth, one-fourth cupful sugar, a little salt,

baking powder enough to lay on dime. Mix and bake three-fourths of an hour. Serve with cream.

Filling for Cream Puffs

Boil one quart of milk; add one-half cupful of sugar, butter the size of walnut, four tablespoonfuls of cornstarch. Boil well; put to one side; add yolks of three eggs well beaten; flavor with vanilla. Serve with whipped cream. This makes 40 puffs and filling.

Boston Cream Puffs

Five cupfuls of water, two cupfuls of butter. Add butter to water when water is boiling hot; add four cupfuls of flour stirring constantly for five minutes. Take off and let cool. Then work in 10 eggs, one at a time. Let stand twenty minutes; then drop mixture off spoon onto tins in lumps size of an egg and bake 50 minutes in hot oven. Use above filling.

Rhubarb Pudding

Make a batter as for rich biscuits; cut in dice one pint of fresh rhubarb; stir in and steam or bake. Serve with cream and sugar. This is very nice.

A Delicious Custard

Into each individual custard cup, put the yolk of one egg; add one heaping teaspoonful of sugar, two gratings of nutmeg and five tablespoonfuls of sweet milk. Incorporate thoroly and set the cups in a pan of hot water. Bake in a moderate oven until firm, using the whites of the eggs for a meringue; allow one tablespoonful sugar to the whites of each egg. Thru the very tip-top of each snowy mound drop a teaspoonful of orange marmalade.

BAKER'S Breakfast Cocoa

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For delicious natural flavor, delicate aroma, absolute purity and food value, the most important requisites of a good cocoa, it is the standard.

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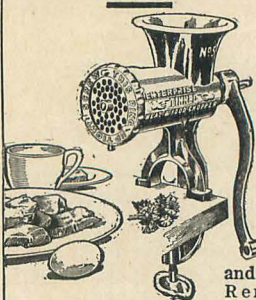
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Get the Chopper that Really Chops

Making appetizing, wholesome dishes from "left-overs"—particularly meat—is the everyday purpose for which you use a chopper. You can have these bits of meat cleanly chopped or just mangled—it all depends on the chopper you use. The

ENTERPRISE Meat AND Food Chopper



with its four-bladed, sharp steel chopping knife, gives the chopping cut. It is the one real chopper designed to cut meat AND food, it is the great utilizer of foods that would ordinarily be wasted. It means economy in table cost and better living.

Remember "AND." Say it to your dealer;

then you will get what you will be delighted with—the Enterprise Meat AND Food Chopper. A still lower priced machine is our Standard Enterprise Food Chopper.

If you write us, we will send you "The Enterprising Housekeeper," more than 200 tested recipes and household helps, for 4 cents in stamps.

THE ENTERPRISE MFG. CO. OF PA.
Dept. 32, Philadelphia, Pa.



Why "Mound City" House Paint HOLDS Its Gloss

WHY do you see so many dull,
faded-looking houses?

The trouble with such houses is that they are Oil-hungry. They are painted with a paint that has not enough Linseed Oil in it—a paint that never *could* have enough Oil in it on account of the character of the pigments used.

The best Paint *must* do two things. It must preserve and beautify. Do you know that Linseed Oil is *the* great preservative in Paint and that if it were not for the sake of appearance, you could give your house a coat of pure Linseed Oil, and it would be protected?

The solid part of Paint (Strictly Pure White Lead, Strictly Pure Zinc, and, in some Paints, baser metals) acts as beautifier only.

Strictly Pure Zinc absorbs more Oil than any other pigment and that is the reason for its use in Horse Shoe Paint. WHITE LEAD is used for its covering qualities, and ZINC for its *Oil-carrying* capacity.

And Oil-carrying capacity is what your Paint *must have* if your property is to be protected.

Horse Shoe Paint, while it covers and beautifies the surface thoroughly, is made of pigments that carry so much oil, that the *first* coat satisfies the oil-hunger of the wood leaving the second coat to gloss, harden, protect, and beautify.

That's why Mound City Horse Shoe Brand House Paint HOLDS its gloss.

Mound City Paint & Color Co.

GOOD MAKERS OF GOOD PAINTS

St. Louis, U. S. A.

The Rough-Road Car

By R. E. Olds, Designer

After 26 years of experience, I tell you a car for the average road ought to be built like this.

Overcapacity

The builder must know the needed strength. Then he must add at least 50 per cent, as we do in this Reo the Fifth.

He must know his steel—have it made to his formula. Then analyze it twice to make sure of it.

He can't test gears with a hammer. He must, as we do, use a crushing machine of 50 tons' capacity.

Not Enough

Tires are expensive. But over-size tires are essential to low upkeep. We use 34x4.

Roller bearings cost five times as much as common ball bearings cost. But the right car must have them. In Reo the Fifth we use 15, eleven of which are Timkens.

Drop forgings are costly, but we

use 190 to avoid the risk of flaws. We use a \$75 magneto, big brakes and springs, a doubly heated carburetor, a centrifugal pump. And not an engine goes out until 48 hours have been spent in five radical tests.

Reo the Fifth, without these extremes, would cost in the building \$200 less. But in the next five years repairs and upkeep would cost you several times that much.

I Know

These are things I know. I have learned them from tens of thousands of cars in my 26 years of car building.

These extra precautions cost this concern two million dollars per year. We are not spending that without knowing the need of them.

We save by efficiency—by building all our own parts. We save 20 per cent by building only one model. Then we spend all those savings on hidden parts. To give you a car which, year after year, will serve you as well as when new.

Look below the frills when you buy a car. All modern cars are attractive. Find out what the maker hides.

A one-summer car is built very differently from a car that is built for keeps. If you want an honest car—a car that endures—watch these inner features.

New Control

Reo the Fifth has our new control. All the gear shifting is done with one center rod, entirely out of the way. It is done by moving this rod only three inches in each of four directions.

There are no levers to clog the way of the driver. Both brakes are operated by foot pedals. And this car, like all the leading cars, has the left side drive.

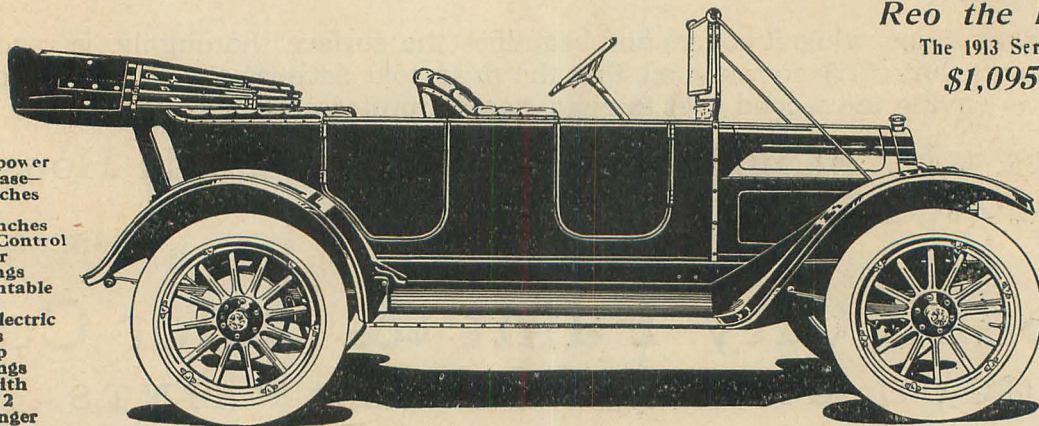
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Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, Prest-O-Lite gas tank for headlights, speedometer, self-starter, extra rim and brackets—all for \$100 extra (list price \$170). (Gray & Davis Electric Lighting and Starting System at an extra price, if wanted.)